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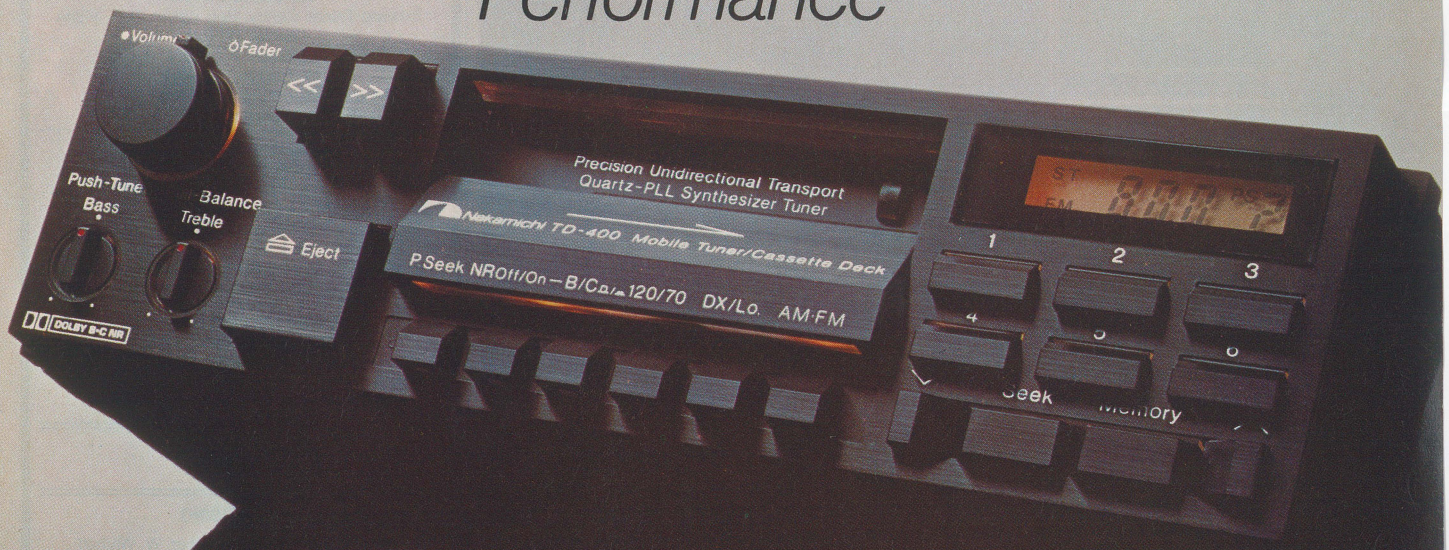
The Sound of Nakamichi

Formidable Performance



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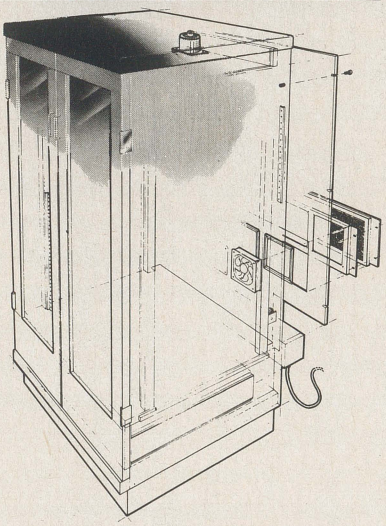

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The Speaker Specialists®

"The Genius of Matthew Polk Creates Better Sounding Loudspeakers"

We Are the Speaker Specialists

"Vastly Superior to the Competition"
Musician Magazine

☐ SDA Series ☐ Monitor Series ☐ Mobile Monitor Series ☐ VideoSound Series

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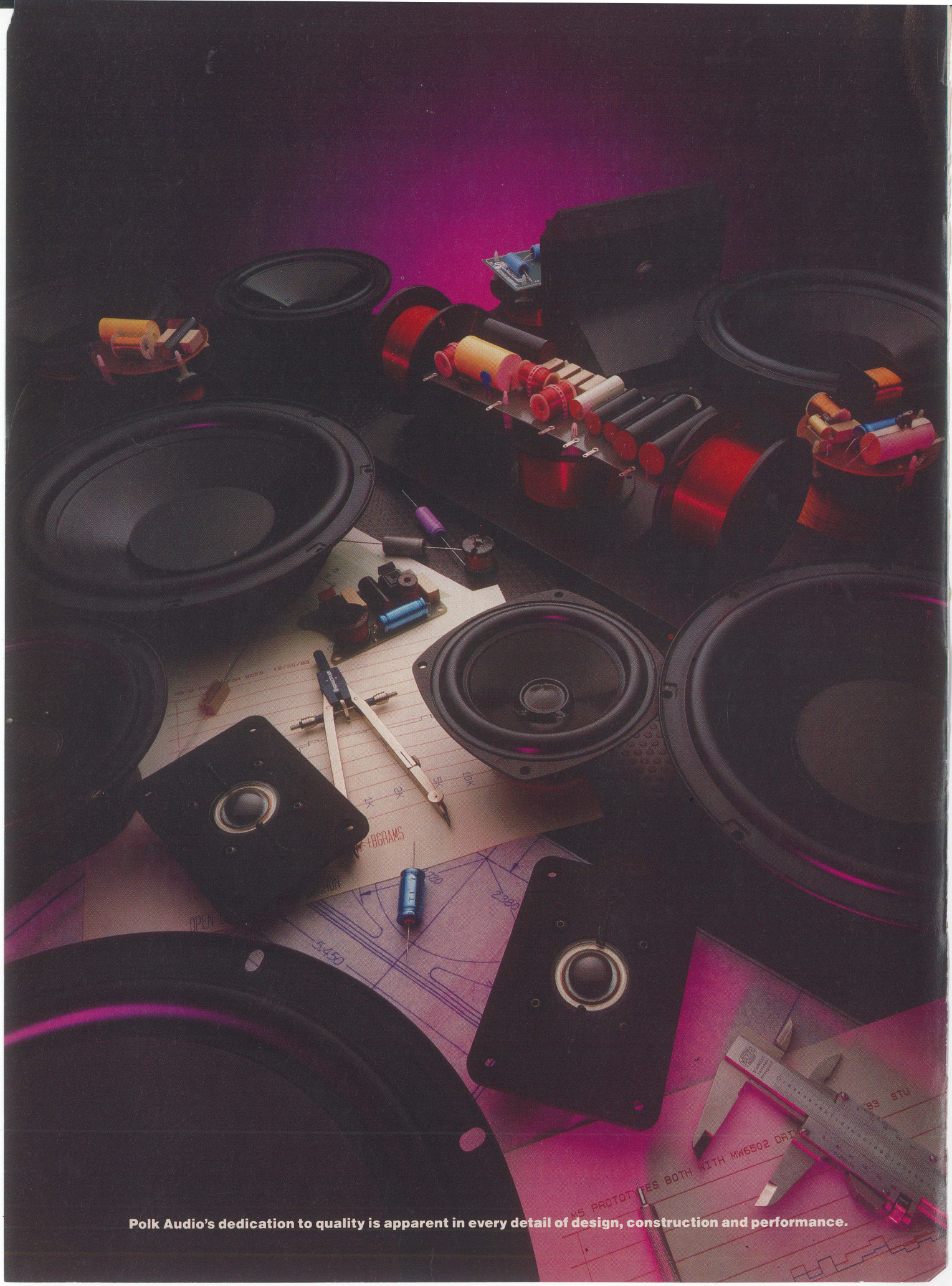
Polk Audio's dedication to quality is apparent in every detail of design, construction and performance.

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The Speaker Specialists®

"Polk's Dedication to Quality Results in Dramatically Better Sound"

State-of-the-Art Technology, Performance and Value

We are The Speaker Specialists!

Polk speakers are designed better, built better and sound better! That should come as no surprise because high quality speakers are Polk's specialty. Appropriately Polk has been officially and exclusively authorized by the U.S. Government to call itself "The Speaker Specialists." It is common knowledge that if you want to do something better than anyone else you have to specialize. We specialize in speakers, so that we can build them better to sound better. Just ask the experts, like Musician Magazine, who said Polks are "Vastly superior to the competition."

Hear for Yourself Why Polk is #1

Last year, for the 3rd year in a row, Polk was selected as the #1 loudspeaker manufacturer (among a total of 74) in the Audio Video Grand Prix Award voting. This prestigious competition is voted on by the audio industry itself (much like the Academy Awards) to single out products that best exemplify the state-of-the-art in audio, combined with benefits and value for you, the listener. Polk builds a wide variety of superb sounding speakers to suit different needs and applications, however, the ultimate goal is always your total musical satisfaction. Musician Magazine said "Our advice is not to buy speakers until you hear the Polks." Do it soon. Hear for yourself why Polk is #1!

Polk's "You Are There" Musical Quality

At Polk we feel that the most important goal of loudspeaker performance is the ability to recreate the illusion and excitement of a live musical performance or sonic event. Objective performance tests are important, and innumerable lab tests document the outstanding measurable performance of the Polk loudspeakers. But more importantly Polk loudspeakers excel in their ability to make your music come alive. When you listen to a pair of Polks it seems like you are there at the live event. The loudspeakers disappear in a life-like, three-dimensional panorama of musicians performing in your room.

Polk's World Class Technology

You will find award winning state-of-the-art technology and performance in every Polk speaker system from the least to the most expensive. Polk Audio's many technological triumphs have been well documented by an uprecedented series of rave reviews around the world (copies are available). In addition, Polk loudspeakers have been honored by winning the Audio Video Grand Prix for the last 5 years and being selected for the prestigious CES Design and Engineering Exhibition for the last 8 years in a row (an unprecedented accomplishment). What is the secret? Polk builds each and every loudspeaker with the same world class standards of construction quality and dedication to sonic performance accuracy.

Polk's Design Goals Give You Better Sounding Speakers

Polk Audio's design goals were all selected to achieve better sound in your home and give you the greatest listening pleasure and long term satisfaction from your music, records and hi fi.

Open, life-like, three dimensional imaging
recreates the spine tingling excitement of musicians actually playing in your room, with height, depth and placement across the sound stage.

Smooth, accurate frequency response
across the entire audible range provides you with natural, non-fatiguing, easy-to-listen-to sound.

Dynamic bass performance
Your speakers will rattle the windows when a kick drum or low organ pedal calls for it, but will also reproduce all the subtle delicacy of plucked or bowed string bass or cello.

Ultra wide sonic dispersion
ensures that you will receive optimal sound through your listening room.

Instantaneous transient response
means your music will be crisply reproduced with life-like clarity and detail.

High efficiency and power handling
Your Polk loudspeakers can be used with virtually any amplifier or receiver, large or small. They will play very loudly if desired, but also sound exceptionally clear at low volume levels.

Optimal performance in your room
Polk speakers are easy to position and are designed to provide superior performance in your listening room.

Unit to unit consistency and long-term sonic integrity
are assured by completely testing every loudspeaker. Your Polk speakers will sound as good as the laboratory prototypes.

Extended Lifecycle engineering
means your Polks will deliver optimum performance for many, many years.

Polk Delivers Unexcelled Value

There is one aspect of Polk products which is almost totally unique among high technology state-of-the-art loudspeaker systems, and that is the concept of value. In addition to superior performance and advanced technology, Polk loudspeakers also offer more uncompromised performance per dollar than any other speakers on the market. If you're looking for life-like musical quality, world class technology and unexcelled value, Polk loudspeakers are your obvious choice.

Polk Technology Serves Music and You

The ultimate goal of every Polk loudspeaker is your total musical satisfaction. Every detail is painstakingly attended to in order to achieve this. Human creativity and computer accuracy have been combined to design loudspeakers of unexcelled musical quality. The advance technology drivers and complex crossovers were all designed and are manufactured to meet exacting and rigid specifications. The beautiful cabinet work is a joy to behold. Each of the critical operations involved in constructing a Polk loudspeaker is carefully executed by skilled, highly trained technicians. Polk's unique Cidac computerized 100% quality control program checks every important performance parameter. Technology in the modern world serves many purposes. At Polk Audio, technology truly serves music, and you.

Sonic Superiority Has Made Polk Audio the Most Honored Name in Loudspeakers.

Where to buy Polk Speakers? For your nearest dealer, see page 29.

Matthew Polk with his AudioVideo Grand Prix winning SDA SRS and latest Technological Triumph: the extraordinary SDA SRS 2, honored with the 1986 CES Design & Engineering Award.

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The Speaker Specialists ®

"The Genius of Matthew Polk Creates The Ultimate Loudspeaker for You"

"Spectacular. It is quite an experience."
Stereo Review Magazine

For the last four years, Matthew Polk has been driven by an all consuming passion: to develop the ultimate SDA loudspeaker which fully realized the sonic potential of his revolutionary SDA TRUE STEREO technology.* Thousands of man hours and hundreds of thousands of dollars have been spent in his single-minded pursuit of this goal. The extraordinary result of his quest is now available in handcrafted limited quantities, for those discerning listeners who seek the absolute state-of-the-art in musical and sonic reproduction.

The Joy of Owning the Ultimate

The SDA Signature Reference Systems are Matthew Polk's own dream speakers. You too can share and experience his dream. He is so proud of the SRS's that each one bears his signature. The joy of owning an ultimate loudspeaker knows no bounds. Music lovers who are privileged to own a pair of SRSs will share Matthew Polk's pride every time they sit down and enjoy the unparalleled experience of listening to their favorite music through these extraordinary loudspeakers, or when they demonstrate them to their admiring friends.

A Significant Advance in State-of-the-Art Loudspeaker Technology and Sonic Performance

The SDA-SRSs are the extraordinary flagship models of Polk's critically acclaimed SDA Series which is comprised of the SDA-1B, SDA-2A, SDA-CRS +, SDA-SRS and SDA-SRS2. These remarkable sounding, 3rd generation SDA speakers combine the latest refinements in Polk's exclusive and patented TRUE STEREO technology with time-compensated, phase-coherent multiple driver vertical line-source topology. The results are high efficiency systems of awesome and seemingly limitless dynamic range and bass capabilities which reproduce music with a precise, lifelike, three dimensional soundstage which is unequaled. The SRS contains 8 Polk 6½" trilaminate-polymer drivers, a planar 15" sub-bass radiator, 4 Polk 1" Silver Coil polyamide dome tweeters and an incredibly complex and sophisticated Isophase Crossover System. The SRS2 incorporates 4 Polk 6½" trilaminate-polymer drivers, a planar 15" sub-bass radiator, 2 Polk 1" Silver Coil polyamide dome tweeters and a similar Isophase Crossover system. One of the unique features of the crossover is the progressive variation of the high frequency high-pass circuitry which maintains virtual point source operation resulting in wide horizontal and vertical dispersion. Power handling is nominally rated at 1000 watts per channel for the SRS and 750 watts for the SRS2, although the high efficiency of the system allows superb performance to be realized with a good quality receiver. Bass performance, is in a word, breathtaking. The use of small active drivers coupled to the large 15" sub-bass radiator results in extraordinarily tight, quick and three dimensional mid and upper bass combined with low and sub-bass capabilities which are staggering (clean output at 25Hz exceeds 100db!) An elaborate monocoque cabinet and bracing system is employed resulting in remarkably rigid cabinets which virtually eliminates coloration due to panel resonances. Separate inputs for high and low frequency sections of the system (SRS only) allows bi-wire or bi-amp operation without the need for a separate electronic crossover. Both speakers are beautifully finished. They are elegant loudspeakers which look as good as they sound.

Introducing the New SDA Signature Reference System

"At the CES (Consumer Electronics Show) among the crop of new and often innovative speaker systems, probably the most impressive was the Polk SDA Signature Reference System, which shook the walls of the Americana Congress Hotel."
Stereo Review Magazine

A Unique Combination of Features and Benefits

Exclusive, Patented SDA TRUE STEREO Technology
for unequaled three-dimensional imaging and a huge, lifelike soundstage.

Effective Bass Radiating Area Equivalent to a 40" Woofer
for breathtakingly full, deep, tight, more well controlled bass and sub-bass response.

Multiple Driver Line-Source Topology
for ideally focused wave propagation which minimizes floor and ceiling reflections combined with greater clarity, lower distortion, higher power handling and increased dynamic range.

Phase-Coherent, Time-Compensated Driver Aligment
for better focus, lower coloration and a smoother, more coherent midrange.

Progressive Point-Source Tweeter Array
for greater vertical high frequency dispersion, achieved by eliminating multiple tweeter high frequency cancellations.

Bi-Wire/Bi-Amp Capability (SRS)
for greater clarity, greater dynamic range and lower I.M. distortion.

Hand Crafted Limited Production
assures you that your pair of SRSs sounds and looks exactly like Matthew Polk's own.

Monocoque Cabinet Construction
eliminates extraneous cabinet resonances and colorations.

The Exquisite Experience of Listening to the SDA Signature Reference System

Listeners' reactions to the sonic performance of the SDA-SRS have exceeded Matthew Polk's wildest expectations. Awesome is the word most often heard to describe the sound. One highly respected critic was totally enthralled by the absolutely effortless way with which the SRS handles the most dynamic musical passages. He was astounded by the unique combination of astonishingly deep bass and sub-bass response of almost unlimited dynamic range, combined with tight quick transient performance across the entire musical spectrum, which is capable of reproducing sonic nuances of the most subtle delicacy.

"...the best SDAs yet... impressive and worthy of Matt Polk's signature"
High Fidelity Magazine

The extraordinarily lifelike three-dimensional imaging capabilities of the SRS demonstrate the full performance potential of Polk's exclusive and patented TRUE STEREO SDA technology. Music and ambience seem to surround the listener in an almost 360° panorama of sonic splendor which is, in the words of High Fidelity Magazine, "Mind boggling...Astounding...and Flabbergasting." The almost unimaginable exciting clarity of the Signatures allow you to hear every detail of the original musical performance; while the exceptionally smooth, natural, low distortion reproduction encourages you to totally indulge and immerse yourself in your favorite recordings for hours on end. Words alone can not express the experience of listening to these ultimate loudspeaker systems. You simply must hear them.

*U.S. Pat. No 4,489,432 and 4,497,064. Other patents pending U.S. & Foreign

Where to buy Polk Speakers? For your nearest dealer, see page 29.

Digital Disc Ready

Matthew Polk's new generation of revolutionary TRUE STEREO SDA Loudspeakers fully realize the astonishingly lifelike three-dimensional imaging capabilities of stereophonic reproduction.

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The Speaker Specialists ®

"The Genius of Matthew Polk Brings You A New Generation of Extraordinary Sounding SDAs"

"Literally a New Dimension in the Sound"
Stereo Review Magazine

"They truly represent a breakthrough."
Rolling Stone Magazine

Polk's critically acclaimed, Audio Video Grand Prix Award winning SDA technology is the most important fundamental advance in loudspeaker technology since stereo itself. Listeners are amazed when they hear the huge, lifelike, three-dimensional sonic image produced by Polk's SDA speakers. The nation's top audio experts agree that Polk SDA loudspeakers always sound better than conventional loudspeakers. Stereo Review said, "Spectacular…the result is always better than would be achieved by conventional speakers." High Fidelity said, "Astounding…We have yet to hear any stereo program that doesn't benefit." Now the dramatic audible benefits of Polk's exclusive TRUE STEREO SDA technology are available in 5 uniquely superb loudspeaker systems, the SDA-1B, SDA-2A, SDA-CRS +, SDA-SRS and the SDA-SRS2. The SDA1B, 2A and CRS + now incorporate many of the 3rd generation advances in SDA technology pioneered in the Signature Edition SRS and SRS2 including full complement sub-bass drive, time-compensated phase-coherent driver alignment and bandwidth-optimized dimensional signal.

SDAs — The First TRUE STEREO Speakers

Without exaggeration, the design principals embodied in the SDAs make them the world's first true stereo speakers. When the big switch was made from mono to stereo, the basic concept of speaker design was never modified to take into account the fundamental difference between a mono and stereo signal. What is the difference between a mono and stereo speaker? It's quite simple. The fundamental and basic concept of mono is that you have one signal (and speaker) meant to be heard by both ears at once. However, the fundamental and basic concept of stereo is that a much more lifelike three-dimensional sound is achieved by having 2 different signals, each played back through a separate speaker and each meant to be heard by only one ear apiece (L or R). So quite simply, a mono loudspeaker is designed to be heard by two ears at once while true stereo loudspeakers should each be heard by only one ear apiece (like headphones). The revolutionary Polk SDAs are the first TRUE STEREO speakers engineered to accomplish this and fully realize the astonishingly lifelike three-dimensional imaging capabilities of the stereophonic sound medium.

How Polk SDAs Achieve True Stereo

Polk SDA Technology solves one of the greatest problems in stereo reproduction. When each ear hears both speakers and signals, as occurs when you use conventional (Mono) speakers to listen in stereo, full stereo separation is lost. The undesirable signal reaching each ear from the "wrong" speaker is a form of acoustic distortion called interaural crosstalk, which confuses your hearing.

The Polk SDA systems eliminate interaural crosstalk distortion and maintain full, True Stereo separation, by incorporating two completely separate sets of drivers (stereo and dimensional) into each speaker cabinet. The stereo drivers radiate the normal stereo signal, while the dimensional drivers radiate a difference signal that acoustically and effectively cancels the interaural crosstalk distortion and thereby restores the stereo separation imaging and detail lost when you listen to normal "mono" speakers. The sonic benefits are remarkable.

SDA Signature Reference System (SRS) – $1395.00 ea.
AudioVideo Grand Prix Winner
The finest speaker that Polk manufactures. This limited production flagship model combines patented SDA TRUE STEREO technology with phase-coherent focused line-source multiple driver topology to achieve new levels of state-of-the-art imaging, detail, coherence, dynamic range and bass reproduction.

New SDA-SRS 2 – $995.00 ea.
This new scaled down version of the SRS incorporates virtually all its innovations without significantly compromising its awesome sonic performance.

SDA 1A – $695.00 ea.
AudioVideo Grand Prix Winner
A beautifully styled, full size floor-standing system combining Polk's state-of-the-art components with exclusive TRUE STEREO technology for extraordinarily lifelike sound. It is now available in vinyl at a new lower price. High Fidelity said "the Polk SDA 1 Loudspeaker provides startling evidence of the audio industry's essential creative vitality."

New SDA 2A – $499.00 ea.
AudioVideo Grand Prix Winner
The new SDA 2A is a full size floor standing system which incorporates many of the latest refinements in SDA technology developed for the SRS models. It represents an extraordinary value which combines spectacular SDA performance with a remarkably affordable price. High Fidelity said listening to the SDA 2 is "an amazing experience."

New SDA CRS + – $395.00 ea.
AudioVideo Grand Prix Winner
The new SDA CRS + is the world's best sounding bookshelf loudspeaker and now incorporates many of the latest refinements in SDA technology developed for the SRS models. It combines the extraordinarily lifelike three-dimensional sonic performance of Polk's patented SDA technology with a handsome enclosure (stand or shelf mountable) of attractively modest proportions. Stereo Review said the CRS is "an impressive achievement".

"Mindboggling…Astounding…Flabbergasting"
High Fidelity Magazine

Words alone cannot fully describe how much more lifelike SDA TRUE STEREO reproduction is. Reviewers, critical listeners and novices alike are overwhelmed by the magnitude of the sonic improvement achieved by Polk's TRUE STEREO technology. You will hear a huge sound stage which extends not only beyond the speakers, but beyond the walls of your listening room itself. The lifelike ambience revealed by the SDAs makes it sound as though you have been transported to the acoustic environment of the original sonic event. Every instrument, vocalist and sound becomes tangible, distinct, alive and firmly placed in its own natural spatial position. You will hear instruments, ambience and subtle musical nuances (normally masked by conventional speakers), revealed for your enjoyment by the SDAs. This benefit is accurately described by Julian Hirsch in Stereo Review, "…the sense of discovery experienced when playing an old favorite stereo record and hearing, quite literally, a new dimension in the sound is a most attractive bonus…" Records, CS's, tapes, video and FM all benefit equally as dramatically.

"You owe it to yourself to audition them."
High Fidelity Magazine

SDAs allow you to experience the spine tingling excitement, majesty and pleasure of live music in your home. You must hear the remarkable sonic benefits of SDA technology for yourself. You too will agree with Stereo Review's dramatic conclusion: "the result is always better than would be achieved by conventional speakers… it does indeed add a new dimension to reproduced sound."

Where to buy Polk Speakers? For your nearest dealer, see page 29.

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The Speaker Specialists ®

"Polk Reinvents the Loudspeaker"

High Fidelity Magazine

"The result is always better than would be achieved by conventional speakers..."

Stereo Review Magazine

Excerpts from the Experts' Rave Reviews of the Polk SDAs

SDA SRS

"Polk's No Compromise Flagship Loudspeaker"

Stereo Review

At the CES (Consumer Electronic Show) among the crop of new and often innovative speakers probably the most impressive was the Polk SDA Signature Reference System which shook the walls of the Americana Congress Hotel...

Polk's no-compromise flagship loudspeaker offers new refinements on the Stereo Dimensional Array design...the SDA system works essentially as claimed...the effect can be quite spectacular...as good as the SDA feature is we were even more impressed by the overall quality of the SDA-SRS as a speaker system. The sound is superbly balanced and totally effortless...unusually open and integrated...the composite frequency response was exceptional no matter how you look at it...only at 10,000 Hz where presumably only one driver was in use, did we reach the limits of the speaker and the amplifier at the same time — 1,265 watts into 5 ohms... almost any amplifier can the drive SRS to the highest listening levels most people would want...the phase compensation of the system was exceptional...we have never measured a low bass distortion level as low as the that of the SRS...we found that the passive radiator response varied only a total of 7 dB between 12 and 90 Hz. Polk calls the passive radiator a "sub-bass driver" with good reason...it is quite an experience. Furthermore, with the SRS it is not necessary to play the music loud to enjoy, the tactile qualities of deep bass...Spectacular"

SDA 1B

"Mind boggling powers of sonic persuasion"

High Fidelity Magazine

Our first, all too brief, audition simply bowled us over. The width, depth and precision of the stereo image are astounding...

after extended listening we were no less astonished...mind-boggling powers of sonic persuasion...The SDA-1's strong suit (to put it mildly) is its imaging which ranges from very good to

flabbergasting, depending on the material…devastatingly dramatic…With good classical discs, the soundstage seems to open up, presenting a greater sense of depth and enveloping the listener more fully in the recorded ambiance…But it's on fancy rock recordings that the system can really strut it's stuff…it really is great good fun. We find ourselves listening to unfamiliar recordings on other speakers and saying to each other, "I wonder what this would sound like on the Polks." Get an audition…It's worth the trouble just for the experience."

"Literally a new dimension in the sound"

Stereo Review Magazine

"Hirsch-Houk Lab's tests of the SDA-1 show that it does indeed add a new dimension to stereo sound. The result is always better than would be achieved by conventional speakers… spectacular…

The sound of the Polk SDA-1 is beautifully balanced…The smoothed and averaged frequency response was quite uniform…The bass output was exceptionally strong down to the lowest frequencies…it reaches an octave or so deeper in the bass than many speakers of similar size…The Polk SDA-1 is an unusually sensitive (efficient) speaker, delivering a sound pressure level of 95db measured at 1 meter…

Polk's SDA-1 speakers produce a broad, precisely defined soundstage, not only between the speakers, but extending appreciably beyond them laterally as well…It will (and should) be bought primarily for its acoustic properties which are unique and completely without any undesirable side effect…Even the audio purist should not cavil over the means by which this speaker achieves its spatial properties. There is no added active circuitry introduced to the signal path and the speakers sound superb in their own right…the sense of discovery experienced when playing an old favorite stereo record and hearing, quite literally, a new dimension in the sound is a most attractive bonus for the owner of the SDA-1 system."

SDA 2A

"Super Stereo from Polk Audio"

High Fidelity Magazine

An amazing experience, and quite startling the first few times you realize it's happening…we have yet to hear any stereo program that doesn't benefit…these are very fine and utterly fascinating loudspekers…you owe it to yourself to audition them, just to see what they can do."

"When we reviewed Polk's first Stereo Dimensional Array we commented on what an exciting and itneresting loudspeaker it was to listen to…it was capable of some extraordinary feats of stereo imaging…Matthew Polk set out to make a less costly version without giving up much in sound quality. He succeeded.

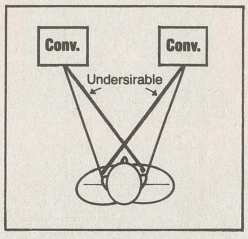
With its grill on, the SDA-2 looks exactly like the SDA-1, only a little smaller…a more convincing illusion than is possible with ordinary stereo…With the SDA's the left ear hears the left speaker and the right ear hears the right…impedance is notably constant …this is beneficial in that it makes the system easier for an amplifier to drive, and we would not expect any problems in this regard…the SDA-2 accepted the full output of the labs amplifiers or 500 watts into, 8 ohms, for a calculated peak sound pressure level of 118db. Plenty loud enough for anyone we would say… Harmonic distortion is quite low. We found them quite satisfactory (and not much different) both against the back wall and out into the room…the balance of the SDA-2 is exceptionally smooth and natural. What does remain unchanged is the remarkable stereo imaging that set the first SDA's apart from the crowd.

"An amazing experience"

High Fidelity Magazine

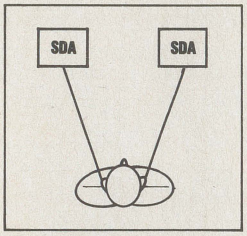
"The result is always better than would be achieved by conventional speakers…"

Stereo Review Magazine



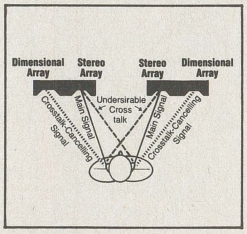
Conventional Speakers Reproducing Stereo

When conventional speakers reproduce stereo, both speakers are heard by both ears which reduces stereo separation, obscures detail and interferes with proper imaging.



Polk's Revolutionary SDAs Reproduce True Stereo

Only Polk SDAs reproduce True Stereo by allowing each speaker and signal (L or R) to be heard by only the correct ear like headphones, which results in dramatically improved stereo separation, detail and three-dimensional imaging.



How Polk SDAs Achieve True Stereo Reproduction

Each Polk SDA incorporates a special extra set of drivers which radiates a difference signal which cancels the undesirable signal going from the wrong speaker to the wrong ear, (interaural crosstalk distortion) resulting in True Stereo reproduction.

SDA CRS +

"An Impressive Achievement…"

Stereo Review Magazine

"It was easy to forget that we were hearing speakers at all. Just the music remained, and it seems to us that this is what hi-fi is all about…

the SDA-CRS is designed to compensate for the fact that in normal stereo playback each ear hears the sound from both speakers, which inevitably affects apparent channel separation and the stereo image…we drove the speakers as hard as our ears would tolerate, with a 350-watt-per-channel amplifier, and they never showed any signs of distress…Our measurements confirm that the Polk SDA-CRS is a very good speaker system — with a host of desirable qualities — when it is judged by the same standards one would apply to conventional speakers. But it is not a conventional system, and it deserves to be examined for the special sonic qualities that are claimed for it.

We recall the impression that the original Polk SDA-1 made on us: The system could provide a dramatic expansion of the sound stage…we found listening to it both intriguing and enjoyable… The new SDA-CRS is capable of doing much the same thing. The SDA system presents the listener with a broad sound stage, which usually extends beyond the space between the speaker cabinets and it also seems to have an added sense of depth. These qualities were apparent from any part of the listening room…The fact that the SDA-CRS will fit in any room, works as well on pedestals as against a wall (we tried them both ways), and costs less than half as much as the revised SDA-1A says something about its intrinsic merits. It is definitely not just another speaker."

Where to buy Polk Speakers? For your nearest dealer, see page 29.

RTA 12C
$479.95 ea.
polk audio
polk audio
polk audio
polk audio
Monitor 10B
$329.95 ea.
Monitor 5jr.
$129.95 ea.
Monitor 4A
$84.95 ea.
Monitor 5B
$189.95 ea.
Monitor 7C
$249.95 ea.
Polk's remarkable Monitor Series Loudspeakers have received worldwide acclaim by offering state of the art technology and performance usually found only in systems which sell for many times their modest cost. (stands optional)

polkaudio
The Speaker Specialists ®

"Polk's Remarkable Monitors Redefine Incredible Sound/Affordable Price"

"At their price, they're simply a steal"
Audiogram Magazine

Polk Audio was founded in 1972 by three Johns Hopkins University graduates who were fanatic audiophiles with a common dream and vision.

Polk's Dream of Super Sound for Everyone

They believed that it was possible to design and manufacture loudspeakers of uncompromising quality which performed as well as the most expensive and exotic loudspeakers available, but in a price range which would make them affordable to virtually every music lover. The original Monitor 7 was the first product of their efforts and it was so successful that when it was shown at the Consumer Electronics Show, dealers and experts alike could not believe its superb performance and affordable price. Audiogram Magazine said, "when we heard the Polk speakers at the CES Show we were so impressed we could not believe the prices." The entire Polk Monitor Series was designed in this tradition of incredible, state-of-the-art sound and affordable prices. In large part due to the quality and value of the Monitors, Polk Audio has developed from its humble beginnings in a garage, to become one of the world's premier loudspeaker manufacturers.

Polk Audio has worked hard over the ensuing years to maintain the Monitor Series' preeminent position as *the* standard for quality and value in the audio industry. The Monitors have been continually improved and refined as a result of Polk's never ending search for better sound quality. There have been literally thousands of improvements made to the Monitors and the result is that today, as in the past, the Polk Monitors are absolutely the best sounding loudspeakers for the money available on the market. Musician Magazine said, "If you're shopping for stereo, our advice is not to buy speakers until you've heard the Polks." You owe it to yourself to follow their advice.

The Latest Generation of Polk Monitors Sounds Better Than Ever

A new generation of Polk Monitors is now available which incorporate the same high definition silver coil dome tweeter and Optimized Flux Density drivers developed for the SDAs. Polk Monitor Series loudspeakers have always had a well deserved reputation for offering state-of-the-art performance and technology usually found only in systems which sell for many times their modest cost. In fact, many knowledgeable listeners consider that outside of the SDAs, the Polk Monitors are the finest imaging conventional speakers in the world, regardless of price. They have been compared in performance with loudspeakers which sell for up to $10,000 a pair and are absolutely the best sounding loudspeakers for the money available on the market. Now they sound even better than ever.

The RTA 12C –
is the finest conventional (non SDA) speaker system that Polk manufactures. Its extremely high power handling (500 watts) and efficiency (92 db 1 meter 1 watt) result in remarkable dynamic range from large or small amplifiers. It utilizes phase-coherent open air driver mounting in a mirror imaged, fullsize floor-standing configuration for superior sonic imaging and clarity. In addition to receiving many rave reviews, the RTA 12C has won the AudioVideo Grand Prix Speaker of the Year Award.

The Monitor 10B –
is considered one of the world's best sounding loudspeakers and in the words of Audiogram Magazine, "At the price they are simply a steal." The 10B offers sonic performance almost equal to the 12 at a lower cost in a more compact enclosure. Like the 12, the 10 utilizes dual Polk trilaminate-polymer bass midrange drivers coupled to a built-in subwoofer for an outstanding bass response and dynamic range.

The Monitor 7C –
is basically a smaller, less expensive version of the Monitor 10. It can be either shelf or stand mounted with excellent results. How good? Audio Alternative Magazine said, "It is Amazing."

The Monitor 5B –
similar in design and performance to the Monitor 7, however, it utilizes an 8″ subwoofer (rather than 10″) and is more compact.

The Monitor 5jr –
has been called the best sounding speaker of its price in the world (regardless of size). It achieves lifelike three-dimensional musical imaging which 10 years ago was not available in any bookshelf speaker at any price!

The Monitor 4A –
shares many of the same high technology components and the rewarding musical performance of the more expensive Polks. Audio Critic Lawrence Johnson called it, "an all around star of great magnitude." The 4A's uniquely affordable price means that no matter how small your budget, you can afford the incredible sound of Polk!

Polk's Uncompromising Standard of Superior Sonic Performance

All the Polk Monitors regardless of price offer consistently superb construction and sonic and performance. They achieve open, boxless, three-dimensional imaging surpassed only by the SDAs. The Monitors' silky smooth frequency response assures natural, non-fatiguing, easy to listen to sound; while their instantaneous transient response results in music that is crisply reproduced with lifelike clarity and detail. In addition dynamic bass performance, ultra wide dispersion, high efficiency and high power handling are all much appreciated hallmarks of Monitor Series performance.

The consistently superb performance of the Polk Monitors is in large part due to the fact that they all utilize very similar components and design features. However, more importantly, it is the elegant integration of concepts and components which results in the superior sonic performance and value which sets the Monitor Series apart. Audiogram magazine said, "How does Polk do it? We think it is mostly execution. They hear very well and they care." Audiogram is absolutely right. At Polk we take the same care with each and every product we build, whether it is our most or least expensive. We lavish the same lengthy amount of critical listening and tuning on every single Polk speaker because we know that having a limited budget does not necessarily indicate that you have a limited ability to appreciate true musical quality.

There's a Polk Monitor Perfect for You

There are six Polk Monitor Series loudspeakers. As you move up the Monitor Series the speakers get larger, more efficient, handle higher power, have greater dynamic range and better bass response. They are designed so that a smaller Polk played in a small room will sound nearly identical to a larger Polk in a large room. And, of course, a larger Polk in a smaller room will play that much louder and have even more bass. The RTA 12C also incorporates unique technology which results in improved imaging and clarity. There is a Polk Monitor which is perfect to fulfill your sonic dreams, at a price you can afford.

Where to buy Polk Speakers? For your nearest dealer, see page 29.

polk audio
The Speaker Specialists ®

RTA 12C
$479.95 ea.

Monitor 10B
$329.95 ea.

Monitor 7C
$249.95 ea.

Monitor 5B
$189.95 ea.

Monitor 5jr.
$129.95 ea.

Monitor 4A
$84.95 ea.

Excerpts from the Experts Rave Reviews of the Polk Monitors

THE MONITOR SERIES

"Open, uncolored, perfectly imaged sound"

Musician Magazine

"**We at Musician have found the Polk Audio Monitor speakers so vastly superior to the competition in their price range we felt we had to pass the information along...**The design produces a remarkably well integrated and coherent sound that adapts itself ideally to all kinds of music...the kind of open, uncolored, perfectly imaged sound we thought began at twice the price and required huge amounts of amplification...will benefit from state-of-the-art electronics, but sound quite magnificent with a good mid powered popular brand receiver...they make the other popular speakers in their price range seem dim, colored, boxy and just plain insufficient. If you're shopping for stereo, our advice is not to buy speakers until you've heard the Polks."

"Outstanding...highly recommended"

Complete Buyer's Guide to Stereo/Hi Fi Equipment

"**Sound beyond what would be expected...highly recommended...**Polk Audio Monitor Series speakers enjoy an enviable reputation among audiophiles who don't have the golden wallet to match their golden ears...designed to appeal to the most critical audiophiles and those audiophiles have embraced them warmly ...outstanding loudspeakers...deciding high end sonic characteristics...unusually pure sound. It's clear that Polk came by their excellent reputation honestly."

MONITOR RTA 12C

"The affordable dream"

Off the Record

"**It is an outstanding example of how advanced technology can be employed in the service of music...**The sonic presentation of the 12's was very impressive...The 12's easily handled the dynamic passages without strain while preserving detail and depth over the entire musical spectrum... Large orchestral works were particularly impressive... Choral works were also well produced with great consistency and frequently uncanny imaging...High level rock was produced with impact and incisive quality...A remarkable quality of the 12's is their ability to

polk audio
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"Vastly Superior To the Competition"

Musician Magazine

"Other comparably priced speakers simply do not come close"

Audiogram Magazine

preserve excellent depth imaging while maintaining a very forward sound stage when the music calls for it. This quality helps to carry the emotional impact of great performances closer to the listener. On an absolute basis it would be difficult to criticize the RTA-12. The RTA-12 is the affordable dream; a well made exotic speaker with performance to match....Polk's RTA-12 may well be the best high performance speaker value on the market today!"

MONITOR 10B

"Superior sound"

Stereo Review Magazine

"Polk offers an uncommon amount of superior sound at a moderate price...Open, boxless, three dimensional quality... We probably would have chosen these adjectives ourselves to describe the sound of the Model 10, but Polk has spared us the chore...the combination of good "sound sense" and a high degree of technical expertise and sophistication has resulted in some truly noteworthy products...It is easy to appreciate the advantages of using a pair of small diameter (but long throw) woofers that can radiate much of the midrange as well as the upper and mid-bass frequencies. Avoiding a crossover in the midrange (the most audibly important part of the musical spectrum) is the best way to eliminate or minimize many of the colorations that have been attributed to crossover networks. The dispersion of the one inch tweeter is exceptional...The tone burst response of the Model 10 is exceptional...the transient response of the Model 10 is absolutely first-rate, and the hemispherical dispersion is superb (we cannot recall measuring better dispersion on any forward radiating speaker)...the speaker sensitivity is adequate for use with a 10-watt amplifier, yet it could absorb the full output of a 200-watt amplifier without damage...exceptionally pleasing sonic balance."

"At their price, they are simply a steal"

Audiogram Magazine

"When we heard the Polk Speakers at the CES Show we were so impressed we could not believe the prices. The sound coming forth from the Model 10 Monitors is something really special. It is a sound that is open, well defined and very low in coloration. One does not generally expect such low coloration in a modestly priced box speaker, and certainly not anything like the definition exhibited by these speakers. How does Polk do it? We think it is mostly execution. They hear very well and they care...Other comparably priced speakers simply do not come close to the standards set by the Model 10...at their price they are simply a steal."

"The best high performance speaker value on the market today"

Off the Record

"Truly noteworthy products"

Stereo Review Magazine

"Our advice is not to buy speakers until you've heard the Polks"

Musician Magazine

"Remarkably well integrated and coherent sound that adapts itself ideally to all kinds of music..."

Musician Magazine

MONITOR 7C

"It is amazing"

Audio Alternatives

We have found something very special. The Polk 7. It is amazing...Hundreds of manufacturers build loudspeakers but only a few in this price range really perform. The Polk 7's perform!... The bottom end of the Polk 7's is tight, fast and can actually reproduce a cello without making it sound like an electric bass...It is sturdily built and attractive. Technically the Polk 7 is a superior loudspeaker in its class. Frequency response is exceptionally flat...Horizontal dispersion is so good that you can stand in front of one 7 and hear the other!...Vertical dispersion is also excellent...It is apparent that this speaker is a real find."

MONITOR 4A

"Star of great magnitude"

Milwaukee Sentinel

"The Polk 4 creates a startling illusion of an elevated stage...the stronger and better quality the signal we fed them the more spectacular the image that blazed up...All of that would be remarkable enough if we were discussing loudspeakers in the $1000 range. The Polk 4 carries a retail price of under $200 a pair. In actual use the Polk 4 is an all around star of great magnitude. Not only do high frequency shine to the farthest reaches of hearing, but musical textures and colors in that stratosphere come through finely controlled and proportioned. And don't be misled by Polk's modest claim for bass response...its low register shows ample depth and clarity. At high listening levels, these pixie Polks deliver the massive brass sonorities of Mahler's Third Symphony with incredible energy, textured pliancy and, most significant, transparency. Factors of presence and stereo imaging proved just as amazing. Yet the Model 4 doesn't have to be whipped to excel ...Late one night, we sat down to a quiet hour of folk music... and experienced the same thrilling detail and immediacy."

Where to buy Polk Speakers? For your nearest dealer, see page 29.

MM XIIA
$99.95 ea.
MM IA
$39.95 ea.
MM IV
$108.95 ea.
MM XA
$99.95 ea.
MM VA system
$108.90 ea.
MM IIIA
$72.45 ea.
Digital Disc Ready
Polk Mobile Monitors allow you to experience the AudioVideo Grand Prix Award winning sound quality of Polk's home speakers in your car.

polk audio
The Speaker Specialists ®

"Polk's Extraordinary Mobile Monitors Sound Like the Finest Home Speaker Systems"

They Turn Your Car Into A Concert Hall

Home Quality Sound for the Road

Polk Mobile Monitors are true, home quality loudspeakers for automotive, boat and other installations calling for compact, flush mount systems of the highest musical performance. They are built to the same uncompromising quality standards and are specifically engineered to achieve the same high level of sonic performance as the critically acclaimed, Grand Prix Award winning Polk home speaker systems. The combination of many design features borrowed from the Polk home systems plus Polk's unswerving dedication to achieving better, more musical sound assures a new level of sonic performance for automotive loudspeaker systems. The Mobile Monitor's rich, full dynamic bass response, high definition clarity, crisp, silky smooth high frequency response, lifelike three dimensional imaging and natural uncolored mid-range will turn your car into a mobile concert hall.

Choose From Four Discrete Systems and Limitless Exciting Combinations

The Polk Mobile Monitor Series consists of 6 discreet speaker systems: The MMIa, MMIIIa, MMIV, MMVa, MMXa and MMXIIa. They are all sonically and functionally compatible with each other and may be utilized individually or in any combination to realize your dream sound system. Authorized Polk Mobile Monitor dealers will be able to assist you in selecting the best combination to suit your own particular needs. Whatever you choose, you are assured of the clear, smooth, thrilling life-like musical sound that Polk is famous for.

Mobile Monitors are Ideal for Wall and Ceiling Installations

The Polk Mobile Monitors were also designed to be easily and inconspicuously mounted in walls and ceilings. The Polks are perfect when you want inconspicuous built-in decorator styling and high sonic performance in any room of your home, office or commercial facility. Just paint them to match your walls or ceilings.

The MM Ia –
4″ Dual Cone Full Range System – is a versatile polymer-treated, full range 4″ system. It can be used by itself in economical high quality systems or combined with any of the other Mobile Monitor systems and located in the door or kick panels of a car for fuller sound or better sonic fill.

The MM IIIa –
5¼″ Coaxial System – is a unique and remarkable speaker that achieves sonic performance almost equal to the MM IV but in a smaller package at a lower cost. The drivers used are similar to those of the MM IV, but the more compact package makes it easier to mount in more locations in the car.

Design Features and Performance Benefits

Natural home quality sound
Turns your car into a concert hall.

Deep, detailed and dynamic bass response
For satisfying car filling bass performance on all types of program material which is capable of both subtle delicacy and profoundly powerful impact.

High efficiency and power-handling
Enables your Polk Mobile Monitors to deliver superior sonic performance with a wide range of head-units and amplifiers for tremendous dynamic range and high volume listening.

Smooth, accurate frequency response
Across the entire audible range provides you with natural, non-fatiguing, easy-to-listen-to sound.

Instantaneous transient response
Means your music will be crisply reproduced with life-like clarity and detail.

Moisture resistant, polymer technology drivers
For life-like high definition sound and total performance reliability.

Excellent imaging and spatial fidelity
Fills your car with sound.

Easy to install flush mount design
Assures simple and convenient installation for superb performance in your vehicle, home or office.

Full sonic compatibility between all systems
You can create the ideal combination to satisfy your needs.

Building block system concept
You can start with a modest system and build your dream super system step by step.

Wide sonic dispersion
For superb sound in all listening positions.

The MMIV –
Two-way plate system – consists of a polymer laminate cone 5¼″ driver, ¾″ wide dispersion high frequency radiator and sophisticated crossover network, all elegantly combined in one compact and easy to install flush mount unit measuring 8¼ × 1½″ with mounting depth of only 1¾″. The attractive housing is molded of incredibly tough, space-age Lexan to assure long-term performance and design integrity.

The MMVa –
6½″ two piece system – is Polk's top-of-the-line automotive sound system. It consists of two separate units per channel: a small, easy to mount ¾″ ferro-fluid damped polymer dome high frequency radiator (with built in 12 db octave crossover network) and the same basic 6½″ trilaminate-polymer driver with butyl rubber surround used in Polk's Grand Prix Award winning home speaker systems.

The two piece configuration allows optimum placement of each driver in the automotive environment for perfect balance and imaging. Advanced material and adhesive technology results in high power handling and long-term reliability. Polk's sonic superiority is made apparent by an extremely open, well defined, crystal clear sound with dynamic bass, rich warm timbre and lifelike depth and imaging.

The MMVaHF
Satellite Tweeter – is available separately with its own built-in 12 db/octave crossover for use in more elaborate installations. It can be mounted on the dashboard or other appropriate positions for added high frequency fill and better imaging.

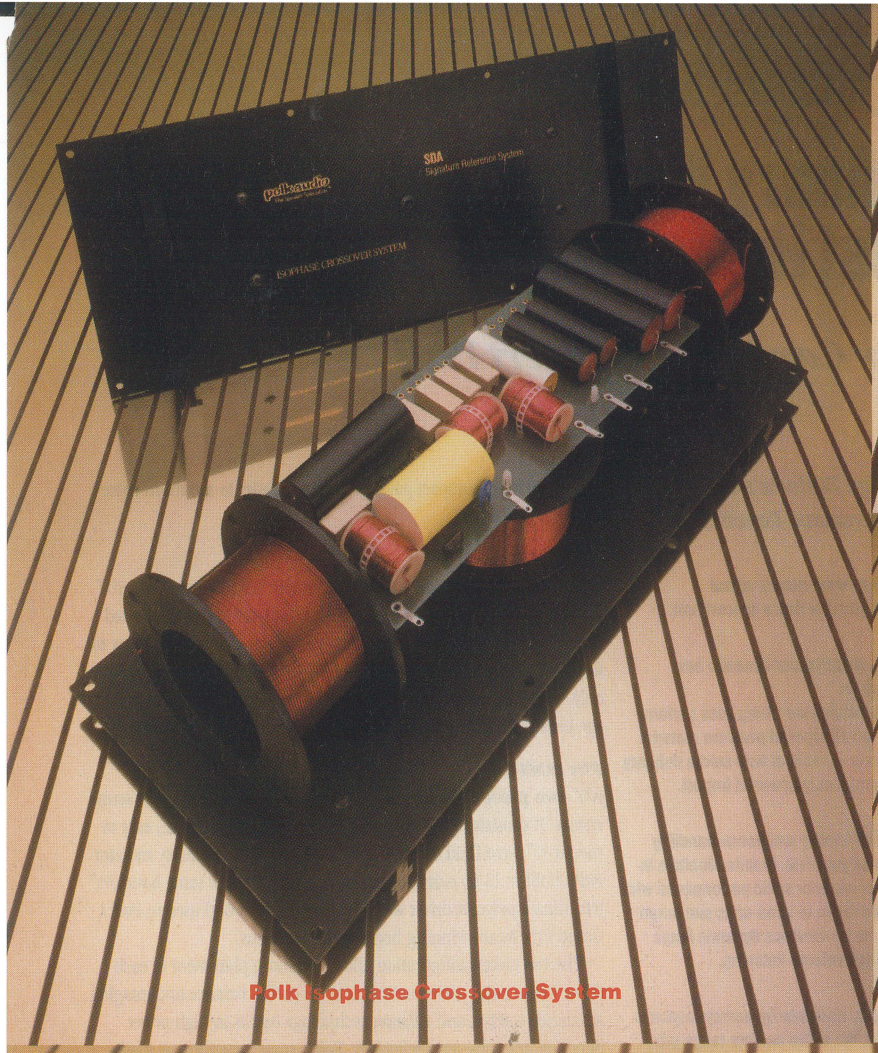
The MMVaLF
6½″ Woofer-Midrange (also called the MMXIV) – comes with a built-in crossover for use in elaborate installations as a woofer-midrange or woofer unit for added midrange fill and better bass.

The MMXa –
6½″ Coaxial System — incorporates the same drivers used in the MMVa, but combines them elegantly into a coaxial configuration which allows easy compact mounting in many areas of your car. The high quality drivers combined with a sophisticated 12/db octave crossover on the tweeter results in smooth, natural, home quality sound not found in other company's automotive speaker systems.

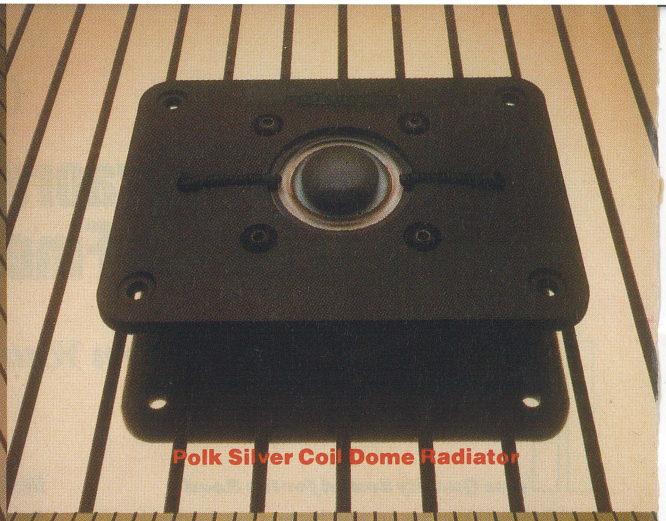
The MMXIIa –
6″ × 9″ Coaxial System – utilizes the same drivers and crossover as the MMX, but mounts them on a 6″ × 9″ mounting plate to allow easy installation when this size configuration is called for.

The MMXIVb –
6½″ Subwoofer – for Bi-amp Installations – is the same basic 6½″ driver with grille as used in the MMX, XII and Va, but without a built-in crossover. It is designed to be used in bi-amplified systems of the highest quality, in any quantity, when bass and sub-bass performance of the highest quality is desired.

Where to buy Polk Speakers? For your nearest dealer, see page 29.



Polk Isophase Crossover System



Polk Silver Coil Dome Radiator

Polk Fluid Coupled Subwoofer

Polk Trilaminate Polymer Driver

polk audio
The Speaker Specialists ®

"Polk Builds State-of-the-Art Components For High Definition Musical Sound Quality"

Consistently Superior Technology Results In Better Sound

High Definition Reproduction

Polk loudspeakers are true high definition systems which reproduce sonic images with life-like clarity and detail, much like a high resolution camera captures a visual image with all the subtle detail and focus intact. When you listen to a pair of Polks, notice how you can hear each and every individual instrument clearly and distinctly, even when there are many instruments playing at the same time. This high resolution capability is in large part due to the consistently excellent transient response of all the drivers as well as the seamless blending achieved by the Isophase Crossover systems.

The Polk Trilaminate Polymer Drivers

These superb drivers are specifically engineered to cover the entire fundamental musical range with life-like clarity and minimal coloration. Polk's exclusive trilaminate (3 layer) polymer cone technology is responsible for a purity and naturalness of reproduction unapproachable by conventional drivers which utilize paper, or simple vacuum formed plastic cones. Polk's unique trilaminate polymer cone is made of three complimentary materials, each of which has unique performance advantages all its own. One material is very light and structurally strong, one is very stiff with a high speed of sonic wave transmission, and one very effectively removes sonic colorations by effectively damping the cone structure. The exceptional performance gained when all three are combined together could never be equalled by a simple layer cone of any single material. Polk drivers utilize costly butyl rubber surrounds for more accurate cone movement and deeper, better bass response. They incorporate high-temperature aluminum voice coils which allow high power operation without burnout. Optimized Flux Density magnet structures are used for perfectly balanced operation assuring clearer, more highly defined, more musical sonic performance.

The Polk Isophase Crossover Systems

The crossover network is the most important component in a high quality loudspeaker system. It is responsible for properly blending the sound of the individual drivers together into the homogeneous sounds of individual instruments and voices. The crossover acts like the "musical conductor" of the loudspeaker, telling each driver just when to come in and exactly how loud to play. The elaborate Polk Isophase Crossover Systems utilize huge copper coils and precision capacitors and resistors to assure the lowest possible harmonic, IM, and transient distortion with complex high level musical signals. Close tolerance, extremely costly mylar and silver mica capacitors are used in many models to achieve even higher sonic definition. In addition, driver equalization is optimized by the sophisticated and complex circuitry, while isophase (phase coherent) operation is maintained by careful control of the various phase relationships in the system. Many loudspeaker manufacturers skip on this critically important component because it is usually hidden from sight, but Polk builds crossovers correctly so that our speakers will sound better for you.

High Performance Components Deliver Sonic Benefits to You

High Definition Reproduction
allows you to clearly hear every subtle nuance and all the inner detail of the musical performance.

The Polk Trilaminate Polymer Drivers
deliver many performance benefits including smoother more extended frequency response, greater clarity, wider dispersion, higher efficiency, improved phase linearity and lower distortion.

The Polk Isophase Crossover Systems
are responsible for the beautifully blended, seamlessly smooth and coherent sound of the Polks.

The Polk Silver Coil Dome Tweeter
achieves a unique combination of sparkling, life-like clarity and silky smooth, easy to listen to, high frequency performance.

Polk's Safety Guard Tweeter Protection Device
is a distortionless, self resetting device which protects the costly tweeters from accidental damage.

The Polk Fluid Coupled Subwoofers
achieve uniquely musical and dynamically awe inspiring bass performance while at the same time raising efficiency and dramatically improving depth reproduction and three-dimensionality.

Butyl Rubber Surrounds
are used on all Polk drivers (except the MMIa). These extremely costly surrounds in contrast to foam rubber surrounds used by many manufacturers are more supple, allow deeper bass, terminate and damp waves transmitted through the cones and don't degenerate over time.

Air Core Coil Chokes
are used in all Polk Isophase Crossover networks. Air core chokes, unlike iron core chokes used by many manufactures, don't saturate at high power levels or change their critical performance characteristics at different power levels. The result is clearer, low distortion and more dynamic musical reproduction.

The Polk Silver Coil Dome Tweeters

This state-of-the-art transducer is the only tweeter in the world which utilizes a voice coil wound with costly silver coated wire for more extended frequency response. The extremely light polyamide dome allows exceptionally quick transient response while the inherently well damped material eliminates annoying resonances. The small diameter diaphragm assures wide dispersion of high frequencies throughout your listening room. In addition, the huge magnet structure combined with the low mass moving system results in vanishingly low distortion, superb wave form accuracy and high efficiency. A specially contoured non-resonant faceplate improves dispersion, lowers diffraction and helps eliminate resonant distortion.

Polk's Safety Guard Tweeter Protection Device

This elegant device is far superior to the circuits used by many other manufacturers, because it is totally distortionless and does not alter or degrade the sound in any way. In addition it is much more accurate and consistent in its operation than a fuse.

The Polk Fluid Coupled Subwoofers

Most Polk home speakers utilize a fluid-coupled subwoofer system for tight, quick, deep, powerful and room-filling bass response. This system realizes the performance advantages of both large and small diameter woofers at the same time. Small diameter woofers have faster transient response, better midrange and dispersion. Large diameter bass drivers couple better to your room and produce more bass. The Polk Fluid Coupled Subwoofer System excels in all these areas. It utilizes the low frequency energy produced within the enclosure by the small bass/midrange drivers to hydraulically energize the large diameter low resonance subwoofer below approximately 60 Hz. The result is remarkably clear, well-defined low frequency reproduction, exhibiting exceptional upper bass detail which extends smoothly and seamlessly down through the sub-bass and cleanly up into the midrange.

Where to buy Polk Speakers? For your nearest dealer, see page 29.

A skilled Polk quality assurance engineer checks every speaker.

polk audio
The Speaker Specialists®

"Polk's Quality Assurance Program Guarantees Sonic Excellence and Total Satisfaction"

One Uncompromising Standard of the highest quality

Polk Completely Tests Every Loudspeaker We Build

There is much more involved in manufacturing a high technology product like a Polk loudspeaker than just developing a state-of-the-art design concept. This is just the beginning. Meticulous workmanship, the use of the highest quality components and effective comprehensive quality control are all necessary to make certain that every pair of Polk loudspeakers delivers all the satisfaction that they are capable of. Polk is committed to assuring you that the Polk speakers that you buy sound as good as they were designed to sound and are made as well as they were intended to be made. To achieve this we have developed a uniquely exhaustive, thorough and effective quality assurance program. Our engineers insist that designing superior sounding loudspeakers systems isn't enough. The quality of the design is meaningless unless there is a foolproof quality assurance program to make certain that your loudspeakers will deliver their full performance potential. Unlike most manufacturers Polk completely tests each and every loudspeaker we produce. In fact Polk tests each and every sub assembly and component before it is assembled into the final product.

One Standard of Quality For Every Polk Speaker

Another unusual aspect of Polk's exhaustive quality assurance program is that the same elaborate procedures are followed not only for each example of a particular model, but also for every single Polk loudspeaker, regardless of cost. In other words, a Polk 4A goes through basically the same elaborate and exhaustive quality assurance program as the top of the line SDA-SRS. Polk engineers insist on this, just as they insist on using the same quality components and putting the same care into the design and refinement of every Polk speaker regardless of cost. Why? To give you total satisfaction.

Experienced Human Judgement Plus Unfailing Computer Accuracy

Polk's comprehensive quality assurance program involves both computer testing and tests performed by trained quality control engineers. No effort is spared to assure you of total satisfaction with your new Polk Audio loudspeakers for many years to come.

Polk engineers spent many years developing the CIDAC computer program which is used in Polk's quality assurance procedure. A detailed analysis of the importance of closely held tolerances and their relationship to audible performance resulted in the specification of the proper critical test comparisons essential to total sound quality performance and long term satisfaction. This effective computer procedure is used for those critical objective tests where there is no margin available for human error.

The CIDAC quality control system utilizes a high-speed dual-state parallel binary interface between a state-of-the-art control processor and a group of sophisticated data acquisition and analysis subsystems. The CIDAC master control program serves as the central control for the system, supported by a library of tightly-written machine language routines, which provide high-speed execution in the demanding signal-processing environment. This combination of powerful hardware and sophisticated software allows the system to perform high-accuracy measurements covering all relevant parameters of loudspeaker performance.

Polk completely and exhaustively tests each and every loudspeaker we produce.
Polk engineers know that designing superior sounding loudspeakers isn't enough. The finest design is meaningless unless the quality is guaranteed by a foolproof quality assurance program. Polk completely tests every loudspeaker we build to assure you that your own pair of Polk speakers will be perfect in every way.

One Standard of Quality For Every Polk Speaker
means that regardless of their cost, there is never any compromise in the consistent quality of any Polk speaker.

Experienced Human Judgement Plus Unfailing Computer Accuracy
achieves unexcelled quality assurance in all aspects of construction and performance.

The Human Element
is essential, because there are some critical quality assurance tasks for which there is no substitute for trained human judgement.

Exactingly Close Tolerances
are rigidly adhered to in order to realize the full performance potential of all materials, components and technologies.

Total Testing of Every Sub-assembly
before it is assembled into a finished product eliminates any possible chance of a bad component slipping through final quality control.

Total Testing of Every Finished Product
assures you that your Polk speakers sound as good as the engineering prototypes, and will perform superbly out of the box and for many years to come.

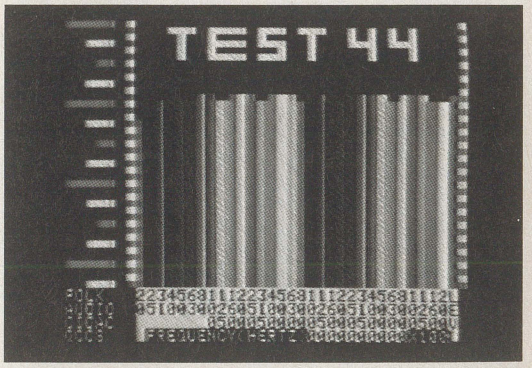
The Pride of Polk Ownership
that comes with every Polk loudspeaker is a very special bonus that is uniquely fulfilling.

Sometimes There Is No Substitute for a Human Being

No machine can ultimately tell you how a loudspeaker sounds reproducing music and only a human being can properly inspect the myriad of small details in order to ensure that each Polk loudspeaker is cosmetically perfect and structurally correct. That is why, at Polk, we utilize a synergistic combination of unfailing computer accuracy and experienced human judgment to fully assure you of the quality of each and every pair of Polk speakers.

The Pride of Polk Ownership

Like a fine watch, camera, or outstanding motorcar; a Polk loudspeaker is meticulously constructed to perform and to last. Its intended goal and purpose is fulfilling your musical pleasure. However, like any finely crafted object, the many and varied delights of owning Polk loudspeakers transcend Polk's original design goals.



Polk's exclusive Cidac computer system precisely and accurately checks every Polk speaker in the critical areas of loudspeaker performance.

Where to buy Polk Speakers? For your nearest dealer, see page 29.

THE SDA SERIES

THE MONITOR SERIES

THE VIDEOSOUND SERIES

THE MOBILE MONITOR SERIES

polkaudio
The Speaker Specialists ®

Visit Your Nearest Dealer and Experience the Magnificent Sound of Polk.

	A. SDA SRS	B. SDA-SRS 2	C. SDA-1B	D. SDA-2A	E. SDA-CRS +	F. Monitor 12C	G. Monitor 10B
Driver Complement	Four 1 inch Polk SL 2000 silver coil dome tweeters Eight 6½ inch Polk tri-laminate polymer bass-midrange drivers (6503) One 15 inch planar fluid-coupled sub-woofer	Two 1 inch Polk SL 2000 silver coil dome tweeters Four 6½ inch Polk tri-laminate polymer bass-midrange drivers (6509) One 15 inch planar fluid-coupled sub-woofer	Two 1 inch Polk SL 2000 silver coil dome tweeters Four 6½ inch Polk tri-laminate polymer bass-midrange drivers (6600x) One 12 inch planar fluid-coupled sub-woofer	One 1 inch Polk SL 2000 silver coil dome tweeter Two 6½ inch Polk tri-laminate polymer bass-midrange drivers (6510) One 12 inch planar fluid-coupled sub-woofer	One 1 inch Polk SL 2000 silver coil dome tweeter Two 6½ inch Polk tri-laminate polymer bass-midrange drivers (6510) One 10 inch fluid-coupled sub-woofer	One 1 inch Polk SL 2000 silver coil dome tweeter Two 6½ inch Polk tri-laminate polymer bass-midrange drivers (6501) One 12 inch planar fluid-coupled sub-woofer	One 1 inch Polk SL 2000 silver coil dome tweeter Two 6½ inch Polk tri-laminate polymer bass-midrange drivers (6503) One 10 inch fluid-coupled sub-woofer
Size (inches)	63½H x 21W x 13D	50H x 20 11/16W x 12 11/32D	43½H x 16W x 12D	39½H x 16W x 12D	12½H x 20W x 9½D	39H x 16W x 11⅞D	28H x 16W x 11¾D
Shipping Weight	182 pounds	142 pounds	85 pounds	80 pounds	36 pounds	75 pounds	50 pounds
Frequency Response	10 Hz-26,000 Hz	12 Hz-26,000 Hz	15 Hz-26,000 Hz	15 Hz-26,000 Hz	24 Hz-26,000 Hz	17 Hz-26,000 Hz	20 Hz-26,000 Hz
Recom. Assoc. Amplification	10-1000 watts/channel	10-750 watts/channel	10-500 watts/channel	10-500 watts/channel	10-200 watts/channel	10-500 watts/channel	10-200 watts/channel
Crossover Frequency	45 Hz and 2000 Hz	45 Hz and 2kHz	50 Hz and 2000 Hz	50 Hz and 2kHz	60 Hz and 2000 Hz	50 Hz and 2000 Hz	60 Hz and 2500 Hz
Nominal Impedance	4 ohms	4 ohms	4 ohms	4 ohms	6 ohms	4 ohms	6 ohms
Maximum Output Level	125dB	123dB	120dB	120dB	116dB	118dB	118dB
Efficiency	93dB	92dB	92dB	92dB	92dB	92dB	92dB
Warranty	Limited five year parts and labor	Limited five year parts and labor	Limited five year parts and labor	Limited five year parts and labor	Limited five year parts and labor	Limited five year parts and labor	Limited five year parts and labor
Price	$1395.00 ea.	$995.00 ea.	$695.00 ea.	$499.00 ea.	$395.00 ea.	$479.95 ea.	$329.95 ea.

	H. Monitor 7C	I. Monitor 5B	J. Monitor 5jr	K. Monitor 4A	L. VS-12	M. VS-19	N. VS-25
Driver Complement	One 1 inch Polk SL 2000 silver coil dome tweeter One 6½ inch Polk tri-laminate polymer bass-midrange driver (6502) One 10 inch fluid-coupled sub-woofer	One 1 inch Polk SL 2000 silver coil dome tweeter One 6½ inch Polk tri-laminate polymer bass-midrange driver (6502) One 8 inch fluid-coupled sub-woofer	One 1 inch Polk SL 2000 silver coil dome tweeter One 6½ inch Polk tri-laminate polymer bass-midrange driver (6502)	One 1 inch polymer dome tweeter One 6½ inch Polk tri-laminate polymer bass-midrange driver (6502)	One 1 inch polymer dome tweeter One 6½ inch Polk tri-laminate polymer bass-midrange driver (6504)	One 1 inch polymer dome tweeter One 6½ inch Polk tri-laminate polymer bass-midrange driver (6504)	One 1 inch polymer dome tweeter One 6½ inch Polk tri-laminate polymer bass-midrange driver One 6½ inch fluid-coupled sub-woofer
Size (inches)	24H x 14W x 9¼D	21½H x 10½W x 8½D	17H x 9W x 8⅞D	14½H x 8½W x 7⅜D	14¼H x 8½W x 11D	18¾ x 8½W x 11D	22¾H x 8½W x 11D
Shipping Weight	36 pounds	29 pounds	45 pounds per pair	32 pounds per pair	19 pounds	22 pounds	25 pounds
Frequency Response	24 Hz-26,000 Hz	28 Hz-26,000 Hz	30 Hz-26,000 Hz	31 Hz-25,000 Hz	30 Hz-25,000 Hz	28 Hz-25,000 Hz	26 Hz-25,000 Hz
Recom. Assoc. Amplification	10-150 watts/channel	10-125 watts/channel	10-100 watts/channel	10-80 watts/channel	3-80 watts/channel	3-100 watts/channel	3-125 watts/channel
Crossover Frequency	60 Hz and 2500 Hz	60 Hz and 3000 Hz	3000 Hz	4500 Hz	3000 Hz	3000 Hz	100 Hz and 3000 Hz
Nominal Impedance	4 ohms	4 ohms	4 ohms	4 ohms	6 ohms	6 ohms	6 ohms
Maximum Output Level	116dB	116dB	114dB	114dB	114dB	114dB	116dB
Efficiency	91dB	91dB	92dB	92dB	93dB	93dB	93dB
Warranty	Limited five year parts and labor	Limited five year parts and labor	Limited five year parts and labor	Limited five year parts and labor	Limited five year parts and labor	Limited five year parts and labor	Limited five year parts and labor
Mounting Depth	—	—	—	—	—	—	—
Price	$249.95 ea.	$189.95 ea.	$129.95 ea.	$84.95 ea.	$99.95 ea.	$149.95 ea.	$199.95 ea.

	O. MM Ia	P. MM IIIa	Q. MM IV	R. MM Va	S. MM Xa	T. MM XIIa	U. MM XIVa
Driver Complement	Full Range 4 inch polymer-treated system	One ½ inch ferro-fluid damped polymer dome tweeter One 5¼ inch polymer-treated bass-midrange driver	One ½ inch ferro-fluid damped polymer dome tweeter One 5¼ inch polymer-treated bass-midrange driver	One ½ inch ferro-fluid damped dome tweeter One 6½ inch polymer-treated bass-midrange driver Driver: ¾ Diam. x 1H	One ½ inch ferro-fluid damped polymer dome tweeter One 6½ inch Polk tri-laminate polymer-treated bass-midrange driver	One ½ inch ferro-fluid damped polymer dome tweeter One 6½ inch Polk tri-laminate polymer-treated bass-midrange driver	One 6½ inch Polk tri-laminate polymer-treated bass-midrange driver
Size (inches)	5-1/4 Diam. x ½H	6⅛ Diam x ¾H	8¼L x 6W x 1½H	Tweeter: 2⅜L x 2⅜W x 1H	6¾ Diam. x 1H	9½L x 6¾W x 1H	6¾ Diam. x 1H
Shipping Weight	5 pounds per pair	6 pounds per pair	7 pounds per pair	9 pounds per pair	9 pounds per pair	9 pounds per pair	8 pounds per pair
Frequency Response	80 Hz-15,000 Hz	40 Hz-20,500 Hz	40 Hz-20,500 Hz	38 Hz-20,500 Hz	38 Hz-20,500 Hz	38 Hz-20,500 Hz	38 Hz-Variable
Recom. Assoc. Amplification	5-50 watts/channel	5-100 watts/channel	5-100 watts/channel	5-100 watts/channel	5-100 watts/channel	5-100 watts/channel	5-100 watts/channel
Crossover Frequency	—	4000 Hz	4000 Hz	4000 Hz	4000 Hz	4000 Hz	Variable
Nominal Impedance	4 ohms	4 ohms	4 ohms	4 ohms	4 ohms	4 ohms	4 ohms
Maximum Output Level	108dB	112dB	112dB	112dB	112dB	112dB	112dB
Efficiency	94dB	90dB	88dB	90dB	91dB	91dB	90dB
Warranty	Limited one year parts and labor	Limited one year parts and labor	Limited one year parts and labor	Limited one year parts and labor	Limited one year parts and labor	Limited one year parts and labor	Limited one year parts and labor
Mounting Depth	1½ inch	2⅛ inch	1¾ inch	2⅝ inch	2⅝ inch	2⅝ inch	2⅝ inch
Price	$79.90 pr.	$124.90 pr.	$219.90 pr.	$219.80 pr.	$199.90 pr.	$199.90 pr.	$119.90 pr.

Your choice of many beautiful cabinet finishes:

SDA SRS and SDA SRS2 are available in a beautiful hand-oiled oak or walnut finish. All other SDA and Monitor speakers come standard in furniture grade walnut or rosewood woodgrain vinyl. All models except the 4A are available at extra cost in hand-oiled oak or walnut finishes. Video Sound Loudspeakers are available in several finishes including designer black vinyl.

Specifications subject to change without notice due to design refinements and/or improvements. Prices are only approximate and may vary. Polk stands are shown in the photographs and are recommended, but optional.

Digital Disc Ready

Where to buy Polk Speakers? For your nearest dealer, see page 29.

SDA SRS
$1395.00 ea.
Digital Disc Ready
Matthew Polk's extraordinary new SDA SRS won the 1985 Audio Video Grand Prix Speaker of the Year Award.

polk audio®
The Speaker Specialists

Matthew Polk Personally Invites You To Win A Free Pair of His Extraordinary Sounding SDA SRSs

"I hope you're the winner of my ultimate loudspeakers"

Matthew Polk

Office of Matthew Polk

Dear fellow music lover,

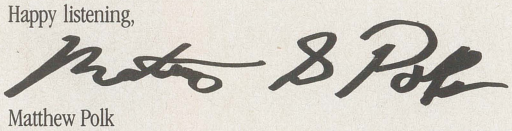
My life and work is dedicated to designing better sounding loudspeakers for your listening pleasure. I am certain that when you hear the remarkable sonic capabilities of my loudspeakers for yourself, you will agree. I would like to join with your nearest authorized Polk dealer in extending a personal invitation to you to audition all my superb sounding Polk speakers, the Incredible sounding/Affordably priced Monitors, the Mobile Monitors, the new VideoSound Loudspeakers and especially my revolutionary 3rd generation TRUE STEREO SDAs. When you visit your nearest Polk dealer to hear them, you will get a free chance to win a pair of my ultimate dream loudspeaker, the SDA-SRSs.

My goal in designing all Polk loudspeakers is to make listening a more satisfying and enjoyable experience for you. Polk Monitor Series speakers have been acclaimed by the world's experts as the best sounding speakers for the money available on the market. SDA technology takes music reproduction a giant step forward (or more properly allows you to correctly hear the full sonic benefits of stereo, over loudspeakers) and now all 5 SDAs incorporate the latest 3rd generation TRUE STEREO technology pioneered in my top of the line Signature Reference Systems (SRS). You must hear the SDAs for yourself to experience the sound that High Fidelity called "Mind Boggling, Astounding and Flabbergasting."

To help me in my work I very much want to know which audible benefits of SDA technology are the most dramatic and significant to you. I would sincerely appreciate this input and to thank you I will be giving away a free pair of SDA-SRSs every 3 months to someone like yourself. Imagine, you may win a free pair of SDA-SRSs just for visiting a Polk dealer and listening to my speakers! Don't pass up this opportunity to hear how much better Polk speakers can make your music sound, and maybe win a pair for free. You will enjoy visiting your local Polk dealer. They have been selected to handle our products because of the high quality of professionalism, expertise and customer service that they offer. I can personally recommend them to take care of all your audio needs. Visit them soon.

Make sure you listen to all the excellent equipment they carry including all my incredibly affordable Polk Monitor Series loudspeakers (priced from approx. $85.00 ea.). They share many of the same components and features of the SDA and bear a strong family resemblance in sound quality as well. I look forward to hearing from you. Thanks again for your help.

Happy listening,



Matthew Polk
V.P. Engineering
Chairman of the Board

P.S. Someone will win a free pair of SDA-SRSs — I hope it's you!

ACT NOW
Free SDA-SRS Drawing

☐ ***Listen to the Magnificent Sounding Polks***
☐ ***Let Matthew Polk know what you think***
☐ ***You may win a free pair of SDA-SRSs***

Visit Your Nearest Dealer Before Dec 15

This is an entry form in a nationwide drawing for a free pair of SDA-SRS loudspeakers. Simply fill out this form and leave it with your participating Polk dealer, after you audition the SDA-SRS.

Name _____

Address _____

City _____ State _____ Zip _____

Phone (please include area code) _____

What most impressed you about the sound of the Revolutionary TRUE STEREO SDAs?

☐ Three dimensional imaging ☐ Huge sound field ☐ Deep, tight, dynamic bass
☐ Lifelike ambience and clarity ☐ High efficiency and dynamic range ☐ TRUE STEREO separation

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"Sonic Superiority Has Made Polk Audio The Most Honored Name in Loudspeakers"

"Our Advice is Not To Buy Speakers Until You've Heard the Polks"
Musician Magazine

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Where to buy Polk Speakers

AUTHORIZED DEALER LIST

ALABAMA Auburn: Audio Warehouse • **Birmingham (Homewood):** Audition • **Huntsville:** Campbell's Audio Video • **Mobile:** Fidler Hi Fi • **Montgomery:** The Record Shop
ALASKA Anchorage: Shimek's • **Fairbanks:** Hoitt's Music
ARIZONA Flagstaff: Sound Pro • **Mesa:** Hi Fi Sales • **Tuscon:** Audio Emporium, Sounds Great
ARKANSAS Little Rock: Leisure Electronics • **Searcy:** Sound Room
CALIFORNIA Arcata: Arcata Audio • **Bakersfield:** Sound Advice • **Berkeley:** Sounding Board • **Campbell:** Sound Goods • **Chico:** Sounds By Dave • **Davis:** World Electronics • **Fairfield:** C & M Stereo Unlimited • **Fresno:** Valley Stereo • **Los Angeles:** Beverly Stereo • **Mill Valley:** World of Sound • **Napa:** Futurvision • **Orange:** Absolute Audio • **Penngrove:** California Stereo • **Sacramento:** World Electronics • **San Diego:** Sound Company • **San Francisco:** Stereo Store, World of Sound • **San Gabriel:** Audio Concept • **Santa Barbara:** Creative Stereo • **Santa Cruz:** Stereo Solution • **Santa Maria:** Creative Stereo • **Santa Monica:** Shelley's Stereo • **Stockton:** Gluskins Camera Audio Video • **Thousand Oaks:** Creative Stereo • **Ventura:** Creative Stereo • **Visalia:** Metro Stereo • **Walnut Creek:** High Fidelity Shoppe • **Woodland Hills:** Shelley's Stereo
CANADA Call Evolution Technology, Toronto for nearest dealer 1-800-263-6395
COLORADO Arvada: Soundtrack • **Aurora:** Soundtrack • **Boulder:** Soundtrack, Wavelength Stereo • **Colorado Springs:** Sunshine Audio • **Denver:** Soundtrack • **Littleton:** Soundtrack • **Pueblo:** Sunshine Audio
CONNECTICUT Avon: Hi Fi Stereo House • **Brookfield:** Sounds Incredible • **Fairfield:** Audio Design • **Greenwich:** Al Franklin's Musical World • **Groton:** Robert's The Musical World • **Hartford:** Al Franklin's Musical World • **New Haven:** Audio Den • **Newington:** Hi Fi Stereo House • **New London:** Robert's The Music People • **Norwalk:** Audiotronics
DISTRICT OF COLUMBIA Myer Emco
FLORIDA Altamonte Springs: Audio Spectrum • **Boca Raton:** Capt. Video • **Daytona Beach:** Stereotypes • **Ft. Lauderdale:** Capt. Video • **Ft. Myers:** Stereo Garage • **Ft. Pierce:** Sound Shack • **Ft. Walton Beach:** Audio International • **Jacksonville:** Audio Tech • **Lakeworth:** Sound Shack • **Merritt Island:** Southern Audio • **Miami:** Audio By Caruso, Capt. Video, Sympathetic Ear • **Naples:** Stereo Garage • **Orange Park:** Audio Tech • **Orlando:** Audio Spectrum • **Pensacola:** Fidler Hi Fi • **Tallahassee:** Stereo Store • **Tampa:** Audio Vision • **W. Palm Beach:** Electronic Connection
GEORGIA Atlanta: Stereo Village • **Augusta:** Stereo City • **Duluth:** Stereo Village • **Morrow:** Stereo Village • **Savannah:** Audio Warehouse • **Smyrna:** Stereo Village • **Tucker:** Stereo Village
HAWAII Honolulu: Stereo Station
IDAHO Boise: Stereo Shoppe • **Moscow:** AudioVision • **Pocatello:** Stokes Brothers • **Sandpoint:** Electracraft • **Twin Falls:** Audio Warehouse
ILLINOIS Aurora: Stereo Systems • **Bloomingdale:** Alan's Creative Stereo • **Buffalo Grove:** Columbia Audio Video • **Champaign:** Glenn Poor's • **DeKalb:** Audio Plus • **Hoffman Estates:** Simply Stereo • **Highland Park:** Columbia Audio Video • **Lansing:** Audio Clinic • **Mt. Prospect:** Simply Stereo • **Normal:** Glenn Poor's • **Northbrook:** Alan's Creative Stereo • **Peoria:** Team Electronics • **Riverdale:** Simply Stereo • Stereo Designs • **Rockford:** Columbia Audio Video • **Shaumberg:** Alan's Creative Stereo, Hi Fi Hutch • **Springfield:** Sundown One • **Sterling:** Midwest Hi Fi • **Vernon Hills:** Alan's Creative Stereo • **Villa Park:** Hi Fi Hutch • **Waukegan:** Alan's Creative Stereo
INDIANA Bloomington: Hoosier Electronics • **Bluffton:** Eley TV & Stereo • **Greenwood:** Hi Fi Buys • **Indianapolis:** Hi Fi Buys • **Lafayette:** Hi Fi Buys • **Marion:** Classic Stereo • **Muncie:** Hi Fi Buys • **South Bend:** Classic Stereo • **Terre Haute:** Hoosier Electronics
IOWA Des Moines: Audio Labs • **Fairfield:** Golden Ear Audio Video • **Mason City:** Sound World • **Sioux City:** Audio Emporium
KANSAS Emporia: Nelson's • **Junction City:** Audio Junction • **Overland Park:** Audio Electronics • **Wichita:** Audio Visions • **Topeka:** Nelson's
KENTUCKY Lexington: Stereo Shoppe • **Louisville:** Hi Fi Buys • **Owensboro:** FM High Fidelity
LOUISIANA Baton Rouge: Stereo Village • **Gretna:** Stereo Village • **Lafayette:** Sound Electronics • **Metairie:** Stereo Village • **New Orleans:** Stereo Village • **Opelousas:** Sound Electronics: **Shreveport:** Audio Fidelity • **West Monroe:** Audio West
MAINE Bangor: Sound Source • **Camden:** Harbor Audio Video • **Westbrook:** Hawk's TV-The Sound Cellar
MARYLAND Annapolis: Spaceways Sound • **Baltimore:** Soundscape • **Frederick:** Evergreen Audio • **Rockville:** Myer Emco
MASSACHUSETTS Fitchburg: Fitchburg Music • **Gloucester:** Glass Sailboat • **N. Dartmouth:** Creative Sound Systems • **Waltham (Boston):** Waltham Camera & Stereo • **Worcester:** O'Coins
MICHIGAN Ann Arbor: Absolute Sound • **Birmingham:** Almas Hi Fi • **Dearborn:** Almas Hi Fi • **East Lansing:** Stereo Shoppe • **Farmington Hills:** Almas Hi Fi • **Grand Rapids:** Sound Room • **Iron Mountain:** Sound North • **Lansing:** Stereo Shoppe • **Portage:** Sound Room • **Royal Oak:** Absolute Sound • **Saginaw:** Audio Shoppe, Court Street Listening Room • **Traverse City:** Stereo Shoppe
MINNESOTA Brooklyn Center: Audio King • **Burnsville:** Audio King • **Duluth:** Mel's TV & Audio • **Edina:** Audio King • **Mankota:** Sound World • **Minneapolis:** Audio King • **Minnetonka:** Audio King • **Rochester:** Sound World • **Roseville:** Audio King • **St. Paul:** Audio King
MISSISSIPPI Gulfport: Empress • **Jackson:** Walters Audio • **Pascagoula:** Empress
MISSOURI Cape Girardeau: Stereo One: **Columbia:** D & M Sound • **Lebanon:** Sight & Sound • **St. Louis:** Sound Central
MONTANA Bozeman: Thirsty Ear • **Great Falls:** Rocky Mountain Hi Fi
NEBRASKA Lincoln: Stereo West • **Norfolk:** Mid City Stereo • **Omaha:** Stereo West
NEVADA Las Vegas: Upper Ear • **Reno:** The Audio Authority
NEW HAMPSHIRE Concord: Audio of New England • **Laconia:** Audio of New England • **New London:** North Star Electronics • **Salem:** Cuomo's
NEW JERSEY East Brunswick: Atlantic Stereo • **Franklin Lakes:** Franklin Lakes Stereo • **Maple Shade:** Bryn Mawr Stereo • **Montclair:** Perdue Radio • **Raritan:** AC Audio & Video • **Ridgewood:** Sounding Board • **Shrewsbury:** Monmouth Stereo • **Toms River:** Rands Camera • **West Caldwell:** Perdue Radio
NEW MEXICO Albuquerque: Real Time Audio • **Carlsbad:** Beason's
NEW YORK Albany: Clark Music • **Batavia:** Unicorn Audio • **Buffalo:** Speaker Shop • **Corning:** Chemung Electronics • **Elmira:** Chemung Electronics • **Fredonia:** Studio One • **Glens Falls:** Audio Genesis • **Huntington:** Audio Breakthroughs • **Ithaca:** Chemung Electronics • **Jamestown:** Studio One • **Manhasset:** Audio Breakthroughs • **Newburgh:** Randzin's Electronics • **New York City:** Audio Breakthroughs, Electronic Workshop • **Rochester:** JB Sound • **Scarsdale:** Listening Room • **Syracuse:** Clark Music • **Vestal:** Hart Electronics • **Wappingers Falls:** Randzin's Electronics
NORTH CAROLINA Asheville: Mr. Toad's Stereo Video • **Chapel Hill:** Stereo Sound • **Charlotte:** Stereo Video • **Greensboro:** Stereo Sound • **Jacksonville:** Southeastern Electronics • **Pineville:** Stereo Video • **Raleigh:** Audio Buys, Stereo Sound • **Wilmington:** Atlantic Audio • Southeastern Electronics • **Winston-Salem:** Stereo Sound
NORTH DAKOTA Bismarck: Pacific Sound • **Minot:** Midwest Audio
OHIO Cleveland: Audio Craft • **Cincinnati:** Stereo Lab • **Columbus:** Stereo Lab • **Dayton:** Micro Computer Center • **Fairlawn:** Audio Craft • **Findlay:** Audio Craft • **Lima:** Classic Stereo • **Mayfield Heights:** Audio Craft • **Toledo:** Audio Craft • **Westlake:** Audio Craft
OKLAHOMA Lawton: Hi Fi Shop • **Stillwater:** Cartunes • **Tulsa:** Audio Advice
OREGON Beaverton: Stereo Superstores • **Eugene:** Bradford's High Fidelity • **Klamath Falls:** Sound Chamber • **Pendleton:** Royal Mobile Sound • **Portland:** Stereo Superstores
PENNSYLVANIA Allentown: Bryn Mawr Stereo • **Altoona:** Sound Concepts • **Blakely:** Hart Electronics • **Bryn Mawr:** Bryn Mawr Stereo • **Camp Hill:** Bryn Mawr Stereo • **Erie:** Studio One • **Frazer:** Bryn Mawr Stereo • **Indiana:** Sound Concepts • **Jenkintown:** Bryn Mawr Stereo • **Kingston:** Hart Electronics • **Lancaster:** G'n'T Stereo • **Montgomeryville:** Bryn Mawr Stereo • **Natrona Heights:** Stereo Land • **Philadelphia:** Bryn Mawr Stereo • **Pittsburgh:** Audio Junction • **Quakertown:** Bryn Mawr Stereo • **Reading:** G'n'T Stereo • **Selinsgrove:** Stereo Shop • **Williamsport:** Robert M. Sides • **Windber:** Pro Audio
PUERTO RICO Rio Piedras: Precision Audio
RHODE ISLAND N. Providence: Eastern Audio
SOUTH CAROLINA Charleston: Audio Warehouse • **Columbia:** Stereo Shop • **Greenwood:** Stereo Shop • **Spartansburg:** Stereo Shop
SOUTH DAKOTA Rapid City: Team Electronics • **Sioux Falls:** Sound World
TENNESSEE Chattanooga: College Hi Fi • **Cookeville:** Network Entertainment • **Johnson City:** Mr. Toad's Stereo Video • **Kingsport:** Mr Toad's Stereo Video • **Knoxville:** Lindsey Ward • **McMinnville:** Network Entertainment • **Memphis:** Opus II • **Nashville:** Hi Fi Buys
TEXAS Austin: Audio Video • **Beaumont:** Brock Audio • **College Station:** Audio Video • **Dallas:** Arnold & Morgan • **El Paso:** Soundquest • **Galveston:** Island Audio • **Garland:** Arnold & Morgan • **Houston:** Sheffield Audio • **Longview:** Audio Techniques • **Lubbock:** Ultra Electronics • **Odessa:** Harold's Electronics • **San Angelo:** Walker Audio • **Sherman:** Worldwide Stereo • **Temple:** Audio Tech • **Texarkana:** Sound Towne • **Waco:** Audio Tech • **Wichita Falls:** Hamilton Bryan
UTAH Logan store only: Stokes Brothers • **Salt Lake City:** Broadway Music • **Vernal:** Dirk Labrum Co.
VERMONT Burlington: Audio Den
VIRGINIA Bristol: Mr. Toad's Stereo Video • **Charlottesville:** Sound Machine • **Falls Church:** Myer Emco • **Franklin:** Audio Showroom • **Leesburg:** Evergreen Audio • **Richmond:** Gary's Stereo • **Roanoke:** Audiotronics • **Virginia Beach:** Digital Sound
WASHINGTON Bellevue: Northwest Audio Video • **Bellingham:** QC Stereo • **Lynnwood:** Northwest Audio Video • **Oak Harbor:** QC Stereo Center • **Richland:** Tin Ear Stereo • **Seattle:** Definitive Audio, Northwest Audio Video • **Spokane:** Electracraft (Hal's) • **Tukwila:** Northwest Audio Video
WEST VIRGINIA Barboursville: Pied Piper • **Beckley:** Pied Piper • **Huntington:** Pied Piper • **Morgantown:** Sound Post • **Piedmont:** Sound Gallery
WISCONSIN Appleton: Sound World • **Green Bay:** Sound World • **Lacrosse:** Sound World • **Madison:** Happy Medium • **Marinette:** Sound Seller • **Milwaukee:** Audio Emporium • **Rhinelander:** Audio Broker • **Wausau:** Sound World
WYOMING Cheyenne: Team Electronics • **Riverton:** Sound Room

Mea Culpa

Dear Editor:

In reviewing the Kenwood KRC-999 Car Stereo (April 1986) Leonard Feldman made the statement, "Azimuth error was only 53° for a 15.8-kHz signal recorded on both channels of the test tape. This is one of the lowest azimuth-error readings I have obtained for car cassette players recently."

In examining Fig. 9, which shows azimuth error as displayed on the Sound Technology ST-1500A, that statement would appear to be valid. However, one of the "problems" with the Sound Tech is that it can only directly display azimuth errors up to a maximum of 180°. In interpreting the display, it becomes necessary to look at the lower frequencies first, in order to establish a trend, so that an accurate assessment of high-frequency azimuth error can be made.

Specifically, if the azimuth error at the 2.8-kHz point is approximately −60° (as shown), the actual azimuth error at a shorter wavelength (15.8 kHz) *must* be greater. In this case, the correct figure at 15.8 kHz would be −307°, or *almost an entire wavelength off.* This large an error may explain why the data was so easy to misinterpret. It would seem that the azimuth error is not "one of the lowest . . .," but rather one of the highest in recent memory.

Michael W. Silber
Palmdale, Cal.

Editor's Note: Mr. Silber is absolutely correct; I misinterpreted the data presented on the Sound Tech. Frankly, I never expected the azimuth error to be that great, so I assumed the lower number. But upon checking the Sound Tech manual I found that this type of indication does mean an error of greater than 180°—*Leonard Feldman*

Setting the Records Straight

Dear Editor:

I just read Ted Fox's interview with Bob Thiele (February 1986) and enjoyed it very much. Bob is an old friend of mine and I produced several sessions for his various labels over the years.

There's just one point I'd like to correct. Bob was not the first to record Duke Ellington and Louis Armstrong together. I recorded them on my Esquire All Americans session for RCA in January 1946, 15 years before Bob's session. I mentioned this to Bob on the phone, and he said that it had slipped his mind.

That was one date I was particularly proud of. I've been making records even longer than Bob, starting in England in 1936 with Benny Carter. Later I produced the record debuts of George Shearing, Sarah Vaughan, Dinah Washington and quite a few others, also writing music, lyrics and arrangements for most of them. For a while I had my own company, Mercer Records, in partnership with Duke's son, Mercer Ellington.

Incidentally, I was responsible for the revival of the Impulse label five years ago and insisted they use the original cover color theme and spines. The reissues I assembled, by McCoy Tyner, Mingus, Rollins, B. B. King and others, are still in the catalog.

Thought you might like to have these details for the record.

Leonard Feather
Sherman Oaks, Cal.

Cultivating Quad

Dear Editor:

In your September 1977 issue you published a letter of mine. The letter concerned the state of quadraphonic sound and included a plea for all interested parties to gather together in a club and perpetuate the medium as best as possible.

Thanks to that one letter, I went on to publish a surround-sound newsletter through 1984. It brought together many people, from all over the world, who truly enjoyed the medium. Unfortunately, as the years have rolled by, surround-sound recordings have dwindled almost out of existence.

However, with the video craze in full swing, I have seen new hope on the horizon for this multi-channel medium and the people who still have not abandoned hope for that format. Many music videotapes are now encoded for four-channel playback, as are major motion pictures. Also, the videodisc format is fast becoming a shining star in this area.

I think a videodisc club is now in order. Not only is this one of the best video playback mediums available, but also a new breeding ground for

Remote control sounds great.

If the components sound great.

Denon America, Inc., 27 Law Drive, Fairfield, NJ 07006
Denon Canada, Inc., 17 Denison Street, Markham, Ont. L3R 1B5 Canada
*Wood side-panels optional. Dolby is a registered trademark of Dolby Labs.

Lots of companies let you run a component hi-fi system from across the room. Some even let you do it with only one remote controller. Sound terrific? That depends... on how the components sound.

At Denon, we believe that superior sound is the only thing that makes high fidelity worth the money. We call this philosophy Design Integrity. And it's evident in every new Denon remote component — from the top of the line you see here* to our most affordable remote models.

The DCD-1500 Compact Disc Player (shown) has already been declared "Reference Class" by Germany's *Audio* and *HiFi Vision* magazines. In the U.S., *Digital Audio* proclaimed, "The Denon engineers who created the DCD-1500 should be honored in public."

Denon's expertise in making pro digital recorders and blank tape is reflected in the new DRM-30HX Cassette Deck. You can see it in the three-head design. In the super-smooth three-motor transport. And in the choice of Dolby® B, C, and HX Pro.

Thanks to Design Integrity, the DRA-95VR Receiver uses the same Pure Current Power Supply, Non-NFB circuitry, and MC cartridge inputs as Denon integrated amps. What's more, every Denon receiver provides switching facilities for a VCR, a video disk player and a video monitor.

So before you buy components whose most impressive feature is a remote control, get yourself to a Denon dealer. And listen to the remote control whose most impressive feature is the components it controls.

DENON
DESIGN INTEGRITY

Enter No. 36 on Reader Service Card

"It amazes me how little people understand about the broadcast business, and I guess that's the fault of those of us who are in it."

surround sound to grow and prosper in. If other *Audio* readers agree with my thoughts, please write to me. I think we can all benefit from each other's input and assemble a new group of devoted quadraphiles.

Jay Frank
7424 Sylvia Ave.
Reseda, Cal. 91335

Powerful Congratulations

Dear Editor:

I rarely have been impressed enough with a story to respond with a letter, but *Audio*'s two-part interview with Mitch Miller (November and December 1985) was such insightful reading that I was inspired to do so.

Ted Fox's probing questions were matched by Miller's energetic repartee, resulting in the most informative and engaging story I have ever read in a music publication. I wish all magazine articles were so wonderfully candid. And if there were more music-business administrators who shared Miller's total honesty and talent, then a new influx of songwriters and producers would have an opportunity to prove themselves. As a record producer and studio owner, I regretfully share Mr. Miller's sentiment that "it's the lawyers and accountants who make the deals today, not the producers or artists."

My congratulations to the *Audio* editorial staff for such frank reporting. Keep up the good work.

Tony Bongiovi
Co-owner, Power Station Studios
New York, N.Y.

Commmercial Support

Dear Editor:

As a 20-year member of the commercial radio broadcasting field, I would like to respond to a letter, titled "FM A-OK," which appeared in the June 1986 "Signals & Noise" column.

The gentleman who wrote the letter apparently knows a lot about radio tuners, but little about how the radio stations operate that broadcast the signals. It is incorrect to say that "commercial broadcasting is designed to serve the needs of the advertiser." It is designed to attract as many listeners as possible. The station that does this gets the most advertising and can charge the highest rates. It is also totally misguided to imply that radio stations use processing of their audio so that advertisers' commercials will be louder, thus supposedly making them happy. Very often, listeners will tune in to the loudest signals on the dial, so processing is designed to get the most listeners. The advertiser has no idea whether his commercial is loud or not. All he cares about is if it gets on the air and if it brings in business.

It is uninformed to say that "the consumer does not care about quality." Every indication is that American consumers are demanding more quality, not less. Also, it is unfair to label commercial broadcasting as "mindless noise." I'm sure that some radio stations could fit into that category, but a majority of commercial broadcasters are extremely concerned about airing a good product, one that will attract the most listeners. As for "mind-numbing advertising," certainly some of it could be called that. But I should point out that the noncommercial stations regularly engage in mind-numbing campaigns for money, which can stretch on for many painful days at a time.

The writer also suggests that commercial radio station operators are not interested in hearing from listeners concerning what they want. Nothing could be farther from the truth. I have seen some radio station General Managers create almost an uproar over one listener complaint.

It never ceases to amaze me how little people understand the broadcasting business, and I guess that's the fault of those of us who are in it.

Mark Weaver
Baltimore, Md.

A Summed Output

Dear Editor:

Just thought I'd share my observations on a few items that have appeared in *Audio* over these past months. Aren't you thrilled?

I was pleased to see the "Auricle" by Anthony H. Cordesman, "One Listener's CD Player Survey," in the January 1986 issue. It was so refreshing and satisfying to see an article on the CD format that was intelligent and unbiased. I've always maintained that CD was not the horror that some critics would have us believe. On the other hand, I never accepted the premise that CDs were "perfect" and that further improvement was unnecessary or impossible. In fact, CD proponents have probably done the most damage because of their overly enthusiastic praise. Nevertheless, for me the CD is an ideal music source.

"Digital Ptomaine" in April 1986 threw me at first. I thought that Neknnaml Hop was writing a serious column, and only near the end did I catch on that it was a farce. The reason for my confusion was the write-up on the Bösendorfer 290 SE system in January's "Behind the Scenes." After that, the idea of a "pure-performance" machine didn't seem so strange to me. But the joke's on Mr. Hop. He refers to research being done on a mechanical throat and mouth which, with the aid of computer control, can mimic the human singing voice. Well, the fact is, there is nothing unique about a lifeless automaton mimicking the human singing voice. Rita Coolidge has been doing it for years!

Ivan Berger should carry a pair of ear plugs with him if loud rock music causes him to put his fingers in his ears! (See April "Spectrum.") Better yet, stay out of those places. I never found excessively loud music to have any appeal. In fact, it's not music at all, in my opinion.

Francis Pivar
New Kensington, Pa.

Eagle Eye

Dear Editor:

I found Herman Burstein's article, "Build a Stereo/Balance Test Switch," in the July issue of particular interest since a vital component of his unit is an Eagle product, catalog No. 615 Knife Switch.

If any of your readers would like information regarding obtaining this switch, they may contact our Sales Dept. at (718) 937-8000.

Steven J. Nussbaum
Eagle Electric Mfg. Co.
45-31 Court Sq.
Long Island City, N.Y. 11101

Editor's Note: Mr. Nussbaum is right; we did use an Eagle product in building the test switch shown in the photo accompanying the article. However, we should note that similar switches from other manufacturers will work equally well.—*E.M.*

Powerful

Musical

Accurate

Throughout the world Carver high fidelity audio components are acclaimed for technology, respected for execution of design, and depended upon for reliability. They are also, and perhaps this is most important of all, appreciated for musicality.

"State-of-the-Art" is merely a point of departure for Carver Corporation. Indeed, since the introduction of its first products, the M-400 Magnetic Field Amplifier and the C-4000 Sonic Holography-Autocorrelation Preamplifier at a major trade show in January of 1979, Carver Corporation, under the direction of its founder, Bob Carver, has been said to have "redefined the state-of-the-audio art."

One reason for this is the inherent difference between Carver Corporation and the conventional mass technology company: There is a single vision behind us in the form of Bob Carver.

Certainly, Carver Corporation maintains a large and talented engineering department as capable as any other major audio manufacturer. A large staff and a great deal of complicated test equipment is only a means to an end. To attain distinction requires the sort of talent and vision which Bob Carver alone has brought to high quality electronics.

Unlike other companies, which have felt compelled to constantly release streams of me-too products incorporating scarcely discernible "breakthroughs", Carver has slowly and deliberately set out to solve previously unsolvable problems. Problems which have limited musical enjoyment and distanced the listener from a totally realistic musical experience.

One by one, Carver's insight and circuit engineering genius—combined with a deep love of music—have produced totally new technologies which stand out from the mass of electronics on your dealer's shelves.

CARVER

Enter No. 28 on Reader Service Card

CRITICAL ACCLAIM

"Bob Carver is definitely an audio and r.f. genius."
(Leonard Feldman, Audio Magazine)

THE MAGNETIC FIELD POWER AMPLIFIER

The technology of the Carver Magnetic Field Power Amplifier solves some of the most basic problems of conventional power amplifiers: high cost, great weight, and excessive heat generation.

The Carver M-400t is the first amplifier to utilize this technological breakthrough. A 200 watt per channel amplifier in a seven-inch cube weighing less than ten pounds, the M-400t is powerful, accurate, and musical.

"Its distortion and noise levels are entirely negligible. It is hardly conceivable that a small, inexpensive, lightweight cube such as this could deliver as much clean power as any but a few of the largest conventional amplifiers on the market—but it does... An important new amplifier design."
(Hirsch-Houck Labs in *Stereo Review*)

Music reproduction was superb and completely free of any false bass coloration or muddiness. The amplifier handled the toughest transients we were able to feed it, with ease. It is, to put it mildly, quite an achievement and one that is likely to change the way many of us think of power amp design in the future."
(Leonard Feldman in *Audio*)

When Ovation Magazine reviewed the M-500t, they reported:

"The amplifier just doesn't look big enough or heavy enough to deliver the kind of power that it claims. But after listening to it for a while, we found ourselves opening it up "full throttle," and only then did we appreciate Bob Carver's remarkable achievement. The amplifier's sound quality is excellent; it need not take second place to even the most esoteric and costly amplifiers in that regard. Listening to its tight, clean bass and its well-balanced, uncolored midrange and treble reproduction, one tends to forget that the cost of that power—on a "dollars per watt" basis, is only $1.11 per watt."

Of the Carver M-1.5t, Peter Aczel, Editor and Publisher of *The Audio Critic* has said, "... the equal of any power amplifier in transparency, focus and smoothness and, of course, far ahead of any other we tested in sheer gut-shaking power and dynamic range. We especially enjoy hearing spatial detail, instrumental definition and completely natural dynamics on familiar records to a degree we did not know was extractable from the grooves when we listened through lesser amplifiers. At this level of sonic performance, the astoundingly small size and cool operation of the M-1.5t become the icing on the cake, rather than the main attraction."

SONIC HOLOGRAPHY

The problems of sonic imagery inherent in conventional stereophonic reproduction have been solved by the Sonic Hologram Generator, available in three different components: The C-4000 and C-1 Preamplifiers and the C-9 Sonic Hologram Generator.

Very briefly, the Sonic Hologram presents timing and phase information that exists in stereo program material—but is normally inaudible. With Sonic Holography, this information emerges in three-dimensional space around the listener who is thus able to establish the precise location of the instruments and voice.

The impact on the listener of Sonic Holography is best described by the most experienced and knowledgeable experts in the audio industry.

"When the lights were turned out we could almost have sworn we were in the presence of a real live orchestra."
Hal Rodgers, Senior Editor,
Popular Electronics

"The effect strains credibility—had I not experienced it, I probably would not believe it... the 'miracle' is that it uses only the two normal front speakers."
Julian Hirsch, Hirsch-Houck Labs,
Stereo Review

"... it brings the listener substantially closer to that elusive sonic illusion of being in the presence of a live performance."
Larry Klein, Technical Director,
Stereo Review

"... seems to open a curtain and reveal a deployment of musical forces extending behind, between and beyond the speakers... terrific."
High Fidelity

"Instruments and performers are located where they belong whether to the front of, between, beside or behind the speakers—in sort, anywhere in a 180 degree arc facing the listener."
Omni Magazine

"The effect is both impressive and exciting to experience."
Stereo Review

BREAKTHROUGH IN FM STEREO RECEPTION

Carver's most recent technological breakthrough is the Asymmetrical Charge-Coupled FM Detector circuit, a special feature of the Carver TX-11 FM Stereo Tuner.

This unique circuit drastically reduces multipath and distant station noise, while providing fully-separated stereo reception with space, depth and ambience.

The TX-11 has received unprecedented acclaim from reviewers:

"It is by a wide margin the best tuner we have tested to date."

"What distinguishes the TX-11 is its ability to pull clean noise-free sound out of weak or multipath ridden signals that would have you lunging for the mono switch on any other tuner we know of."
High Fidelity

"Breakthrough in FM tuner performance: Carver TX-11."

"The significance of its design can only be fully appreciated by setting up the unit, tuning to the weakest, most unacceptable stereo signals you can find, then pushing those two magic buttons."

"Separation was still there; only the background noise had been diminished, and with it, much of the sibilance and hissy edginess so characteristic of multi-path interference."

"A tuner which long-suffering fringe area residents and those plagued by multipath distortion and interference have probably been praying for..."
Leonard Feldman
Audio

"... enjoy the music and forget about noise and distortion."

"Under conditions of weak signal stereo reception the effectiveness is almost magical."
Ovation

"A major advance..."

"Its noise reduction of stereo reception ranged from appreciable to tremendous."

"It makes the majority of stereo signals sound virtually as quiet as mono signals, yet it does not dilute the stereo effect."
Julian D. Hirsch,
Stereo Review

THE CARVER RECEIVER

The 130 watt per channel Carver Receiver which incorporates both the technology of the Magnetic Field Power Amplifier and the Asymmetrical Charge Coupled FM Detector has also received unprecedented praise from the reviewers.

"The Carver Receiver is, without question, one of the finest products of its kind I have ever tested and used."
Leonard Feldman, ***Audio Magazine***

"I consider the Carver Receiver to be the 'most' receiver I have yet tested in terms of the quantitative and qualitative superiority of almost all its basic functions."
Julian D. Hirsch, ***Stereo Review***

THE CARVER COMPACT DISC PLAYER WITH DIGITAL TIME LENS

The Carver Compact Disc Player has been acclaimed for its sound quality as well as for its technology.

Carver CD Player: Superb Sound plus the Digital Time Lens
(From the cover of ***Audio Magazine***)

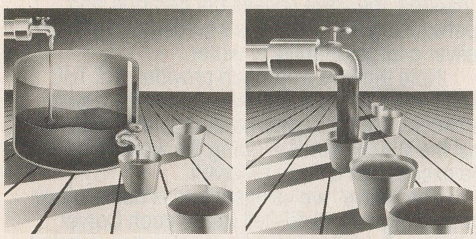
"Leave it to Bob Carver to come up with a CD player designed to please both those who love CDs and those who still have reservations about their sound quality."

"It almost goes without saying that the sound quality produced by this player was superb—without the Digital Times Lens. So, what did the Time Lens contribute? I look upon this circuit as an option, one that can and should be used with certain CDs which seem to lack the depth that I feel belongs in a musical performance."
Leonard Feldman, ***Audio Magazine***

"Suddenly, tonal balance seemed more correct and less strident, and what seemed like a two-dimensional stereo effect appeared to "open up" to some degree—affording the three-dimensional perspective that the musical performances demanded.

"Here, then, is an excellent CD player that provides an option you won't find on other compact disc units."
Ovation Magazine

Magnetic Field Amplifier Technology.



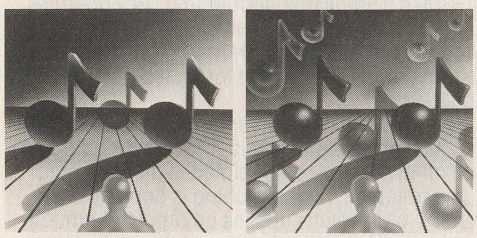
Early on, Bob Carver realized that virtually all available amplifiers were seriously underpowered. It took much more power to properly reproduce reality than could be produced using standard circuits. His first company, Phase Linear, became a leader in amplifier technology through the Seventies, producing the first really high-powered audio amplifiers. However, Bob was not satisfied.

"Why do powerful amplifiers have to be large, bulky, hot and expensive?", Bob asked himself.

The result is the Magnetic Field Power Amplifier which does the work of an eighty-pound amplifier in a compact, cool-running nine-pound cube! Suddenly, sufficient power has become both affordable and manageable for the home stereo owner.

Read about it in detail on pages 4 and 5.

Sonic Holography Technology.



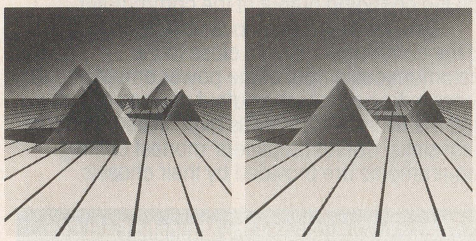
Bob Carver has always been an ardent fan of all types of live music. Like any discerning listener, he realized the limitations of conventional stereo for reproducing the reality of a musical performance. No matter how good the sound source was, how distortion-free the circuit path and how elaborate the loudspeakers, stereo was a pale copy of the concert hall.

"Why can't the sound field be expanded into three dimensions to fill a listening room—wider, higher and deeper than mere stereo?" he asked himself.

The result is Sonic Holography, a patented circuit which unlocks new dimensions of detail and spaciousness from any conventional stereo sound source.

Learn how it can redefine musical reality using your existing speakers, on pages 12 and 13.

Asymmetrical Charge-Coupled FM Detector Technology.



FM has always been the black sheep of the audio world. Unlike disc and magnetic sound sources, it is compromised by problems of transmission and reception that have often made it unacceptable as an audiophile medium.

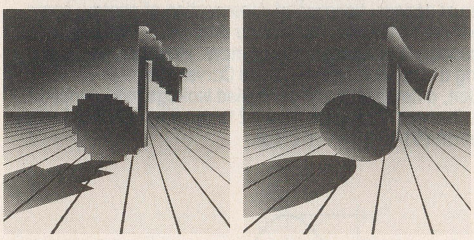
"Why can't FM sound as good as other musical sources?", Bob wondered.

He knew that the method used to broadcast stereo FM was inherently deficient, having been designed for mono transmission and later "patched" to allow for stereo. Thus, conventional improvements in tuning circuitry were of little avail since they actually increased the reception of certain kinds of interference, distortion and noise.

Bob went to the heart of the problem and devised a revolutionary new approach which concentrated on "repairing" a part of the FM signal which is particularly prone to distortion. The result is not only clean, clear signals from previously noisy stations but also the ability to receive weak stations which would normally have been buried in background noise.

Learn how it can improve your FM listening experience on pages 18 and 19.

Digital Time Lens Technology.



Compact Discs represent a significant improvement in frequency response and dynamic range, not to mention ease of use and permanence.

However, audiophiles' critical ears discerned differences between certain CD discs and their analog, phonograph equivalents.

"Why aren't some Compact Discs living up to their potential to reproduce music? Why is there a lack of ambience and shifting of tonality in some releases?", he dared ask.

After exhaustive electronic tests, Bob had several answers. He then set about inventing the Digital Time Lens circuity which could return digital sound exactly as it was intended, with complete ambience and frequency balance.

Then and only then did Carver Corporation offer a Compact Disc player. Along with superb playback cababilities and a wide range of useful features, it gives the listener the option of applying Digital Time Lens technology to CD's which require it.

Learn more about this exclusive Carver feature on pages 27 and 28.

As you can see, Carver Corporation does not merely produce electronics to fill slots in its product line. Carver is committed to the design and manufacture of audio electronics which bring the listener as close as possible to the sound of the original musical performance.

Today, in a modern factory located north of Seattle, Washington, Carver is continuing to push the audio art to unprecedented heights and price/performance standards. On the coming pages, you will learn the details of how Carver electronics can make your listening experience more Powerful, Musical and Accurate.

C A R V E R

MAGNETIC FIELD POWER AMPLIFIER TECHNOLOGY.

All our amplifiers and receivers utilize Bob Carver's proprietary technology, the Carver Magnetic Field Power Amplifier.

Its innovative design simultaneously solves three of the most basic problems found in conventional power amplifiers: high cost, great weight, and excessive heat generation.

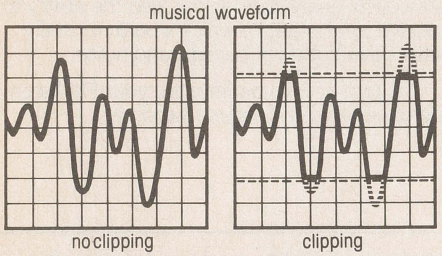
The most basic audio problem has been and always will be how to turn electrical energy into physical waves of sound.

In other words, how to use the same electrical current that powers lights and vacuum cleaners to exactly amplify and emulate faint impulses and present them to your speakers.

Speakers need electricity to move air. They use it to generate magnetic fields inside the voice coils of their drivers. As the coils are repelled by fixed magnets within the speaker, they move outward, pushing the speaker cone with them. It, in turn, transfers that movement to the air in your listening room. A drum beat sounds on the record; energy flows to your speakers; the speakers push the air in some semblance of the original drum beat's impact.

The small speaker drivers which provide treble need only move a few thousandths of an inch and do not require much power. But larger drivers such as bass woofers must move considerable amounts of room air to achieve realistic impact. They travel back and forth hundreds of times per second, often against their own internal air resistance as well. That requires power.

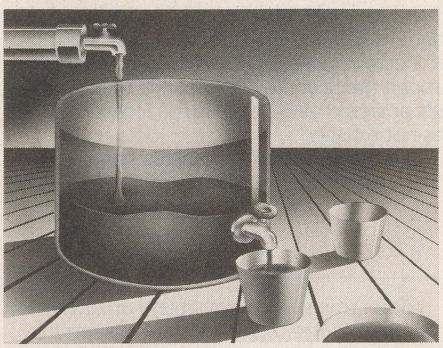
The plain fact is, few amplifiers have the technical capabilities to provide enough power. They can translate say, 90% of a musical waveform into the power your speakers need. But just can't deliver that last 10%. If you look at graphs of this ever-present problem, you'll notice the top of the impulse has been clipped off. That's where the phrase "clipping" comes from.



Even though most clipping happens as the amplifier is trying to complete a bass waveform, audible distortion is generated in the treble range. Called clipping distortion, these impulses are spikes of non-musical, high frequency power caused as the amplifier hits the bottom of its power reserves. At moderate levels, these spikes veil music with a thin film of distortion that occurs with every musical impulse.

At higher sound levels, they concentrate so much energy in the tweeter that it can burn out. It is important to remember this when considering amplifiers of higher power: Most speakers are destroyed by *insufficient* amplifier power—most often in the 20-50 watt range—not high power.

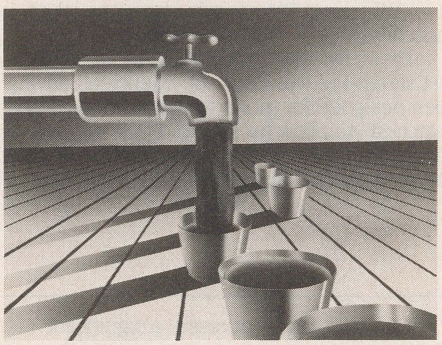
Before Bob Carver, the only way to get enough power to completely eliminate clipping distortion was to buy a traditional, brute-force power amplifier design. Often weighing over 100 lbs., these designs store massive amounts of power against the instantaneous demands of music. They are very costly and inefficient because they produce a constant high-voltage level at all times-irrespective of the demands of the everchanging audio signal. Even when there is no preamplifier signal to amplify, conventional designs are drawing half power from your electrical outlet and converting it to heat!



Consider this analogy for how power supplies work. Imagine an enormous cast iron tub containing several hundred gallons of water. That's rather how conventional amplifiers store power: Huge capacitors and a gigantic power transformer soak up electricity and store it in advance.

When power is needed, it is transferred to the speakers (the bucket in our analogy) the circuitry "refills" the sink during a lull. This means there is actually LESS POWER during peak demands—and MORE wasted power during lulls.

Note that it takes an enormous "tub" to store enough water (amp power) to fulfill sudden demand. When this reserve is not being drawn on, the stored power is "evaporated" into heat.



Bob Carver set out to find a better way. A method of delivering the power speakers need without heat, bulk and distortion. The solution is elegant and effective.

Imagine a lightning-fast valve on the incoming water main line (the power outlet into which the Carver Amplifer is plugged). When water is needed, the valve senses the demand and opens, using the *water line's* pressure to quickly deliver a large quantity of water.

Note that this approach provides ALL THE POWER NEEDED during peak demands... without keeping excess around during lulls. Also note that the WATER MAIN is doing the work of storing the excess, not a huge reservoir.

The "valve" we've described is our analogy for the Magnetic Field Coil inside each Carver amplifier. By delivering power only when needed, it can satisfy your speakers' need for power while generating less heat and virtually no distortion.

The patented Carver Magnetic Field Coil looks like a small transformer and yet it operates much differently than conventional transformers. Because it can deliver extremely high peak to average ratios, it is perfect for musical signal applications.

The output of a Carver amplifier is, in reality, the output of the power supply being switched on and off at a rate directly related to the incoming audio frequency. The switching is done by a commutator which supplies an amplitude-modulated, step-like approximation of the audio signal to the output. This approximate waveform is then converted to a replica of the audio input by a small feedback linear amplifier. In effect, the small linear amplifier uses as its power supply rail the changing output of the commutator.

Since the instantaneous voltage output of the commutator is very close to the instantaneous output of the power amplifier, the voltage drop across the output devices is small and the overall efficiency is high. Instead of large heat sinks, Carver amplifiers' modest cooling requirements are provided by their chassis.

Theory of Operation of the Magnetic Field Coil

Referring to Figs. B1A, B1B and B1C, TR1 is fired and turns on at time t1. Current flows into MC1 from time t1 to time t2. During this interval, current also flows in the secondary winding and charges C2 and C3 to voltage equal to V2 times the winding ration of MC1. Since the output is clamped at + or – 80 volts by D3 and D4, C2 and C3, the difference between the reflected clamp voltage (V2) is: $V2 = 80 (n1/n2)$. V1 must appear, because of conservation of energy, somewhere. Ordinarily, the voltage drop (V1 – V2) would appear as IR losses in the primary. However, by winding a magnetic shunt into the Carver Magnetic Field Coil, a deliberate and controlled leakage inductance L1 is formed. This cause V1 – V2 to appear across L1 in the form: $(V1-V2) = -L\,di/dt$.

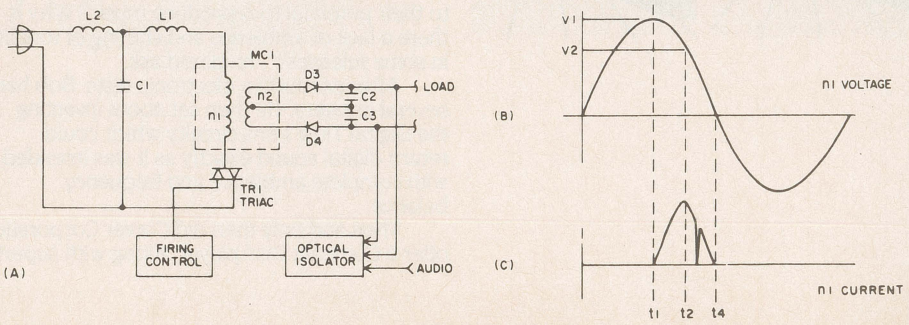


Fig. B1 — Theory of operation of Magnetic Field Coil.

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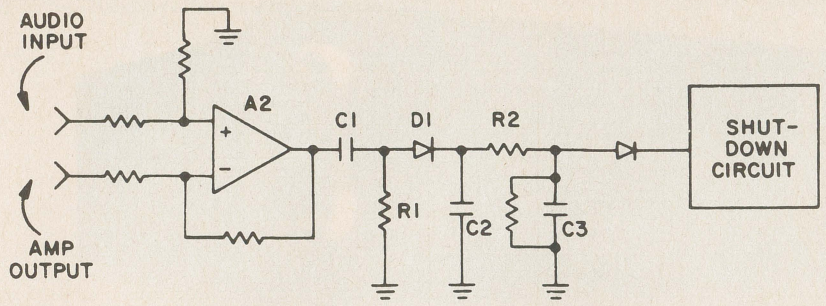

Fig. B6 — Clipping detector circuit.

The energy associated with that quantity is stored in the field of L1. The amount of energy thus stored is ½L1i2, where i is the current flowing at time t2. The amount of power that would otherwise be wasted is: Power = energy/time = ½L1i2/t = ½L1i12/(t2 – t1).

At time t2, the incoming 60-Hz line has fallen below the clamping voltage, hence D3 and D4 switch off. Once D3 and D4 are turned off, the tank circuit formed by L1 (the leakage inductance) and C1 (the commutating capacitor) begins to oscillate. However, since TR1 commutates off as soon as its current passes through zero, only one half cycle of oscillation can take place. Once TR1 has commutated off, the field surrounding L1 begins to collapse. Since the flux linkages of L1 are common with n2, a flyback voltage appears on the secondary and causes D3 and D4 to switch on again, clamping the output to 80 volts. At time t4 current is no longer maintained by L1 since the stored energy has been transferred to the secondary of MC1 and to the load. The same sequence of events takes place during the negative half of the input voltage cycle.

Commutator Details. A more detailed examination of the power supply reveals that the secondary of the Magnetic Field Coil has multiple taps which drive three full-wave bridge rectifiers to form six different levels of supply voltage: + or – 25, + or – 50, and + or – 80 volts. A duty-cycle control circuit maintains these three voltage levels relatively constant, with some "softness" of regulation programmed into the system for good dynamic headroom of the amplifier. The output of these six voltage levels goes to the input of the commutator. The commutator delivers an output voltage that is a step-like approximation of the audio envelope. The time-varying, conjugate-output voltages of the commutator go to a pair of complementary transistors to remove the steps, or to a small 15-watt amplifier whose B + and B – supplies vary in level with the audio signal.

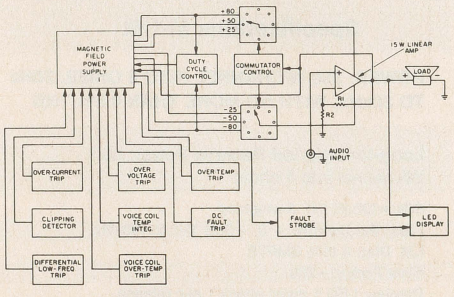

Fig. B5 — Block diagram of Carver Magnetic Field Amplifier.

Protection circuits. As indicated in Fig. B5, Carver amplifiers employ an assortment of protective circuits, all designed to make the amplifier as fail-safe as possible.

The Carver Magnetic Field Amplifier Clipping Detector senses the presence of high-frequency components that occur during clipping. The circuit, detailed in Fig. B6, has two inputs: The input audio signal and the output audio signal from the amplifier. So long as the output follows the input, the output of the differential amplifier, A2, will be zero. If the output fails to follow the input because of clipping or overload, A2 will have an output that is then differentiated by C1R1 and peak rectified by D1C2. This positive d.c. voltage is then time-integrated by D2C3. The voltage appearing at C3 represents the "stress history" imparted to the high-frequency driver during prolonged clipping. Too much clipping will cause the trip threshold to be exceeded, shutting off the supply.

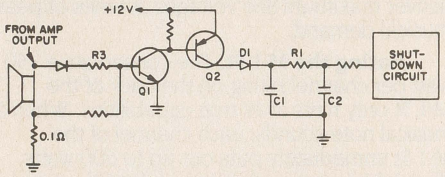

Fig. B7 — Voice-coil temperature integrating circuit.

A Voice-Coil Temperature Integrator circuit represents a first-approximation analog of a high-fidelity loudspeaker's thermal properties. The audio output of the amplifier is rectified and filtered by D1 and C1. Average voltage on C1 is related to the spectral energy distribution and to signal amplitude. C2 charges through R1. The voltage on C2 represents, to a first approximation, the thermal stress history of the loudspeaker system, taken as a whole. The integral Vi dT, the volt-amp-time product, increases faster for high frequencies than for low frequencies. (Tweeters break down more easily than woofers, generally speaking.) The logarithmic junction of Q1 is used to get the product of v x i (power) delivered to the speaker.

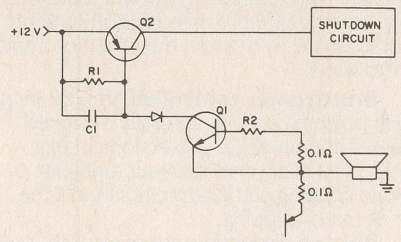

Fig. B9 — Shutdown circuit.

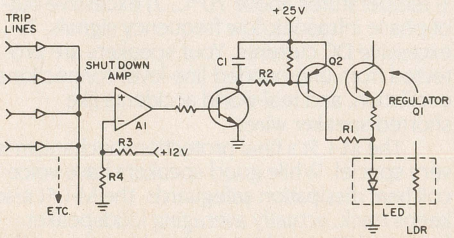

Fig. B8 — Overcurrent trip circuit.

Two other trip circuits protect against overcurrent and out-of-phase low-frequency impulses. If too much current flows in the 0.1-ohm resistors in the output circuit, transistor Q1 in Fig. B8 turns on Q2 which trips the power supply. R1C1 serve as an integrating circuit (with an approximate time constant of 200 milliseconds) to prevent shut-down during very brief overloads.

Since the output of the left-channel amplifier is 180 degrees out of phase with the right channel (see Equipment Profile), in-phase signals at the input to the left and right channels will result in a small signal at Tp1. Out-of-phase signals, on the other hand, will produce a large signal at Tp1. Accordingly, the low-frequency response at Tp1 is small for (L + R) signal components, and large for (L – R) signal components. Response for high-frequency signals is virtually zero for both (L + R) and (L – R) signals because of the bypassing effect of C1. A dropped tonearm, for example, will generate large (L – R) signals, whereas musical bass tones generate primarily (L + R) in-phase signals. Therefore, a low-frequency shutdown is arranged so that it will allow high-power, low-frequency musical signals to pass through, but will shut down for high-power, low-frequency faults. The power supply will try to come on again but will turn off almost immediately (in about 20 milliseconds) after rising in voltage only slightly.

It should be clear from all of the above that the Carver Magnetic Field Amplifier is an extremely sophisticated piece of audio equipment that has left little to chance insofar as long-term reliability is concerned.

L.F.

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Carver amplifiers are not merely powerful. They have been designed by a music lover with a critical ear for the nuances of natural sound.

Consider this comment by the editor of an audiophile magazine about one of the amplifiers you'll read about on the pages that follow: "...the equal of any power amplifier in transparency, focus and smoothness and, of course, far ahead of any other we tested in sheer gut-shaking power and dynamic range. We especially enjoy hearing spatial detail, instrumental definition and completely natural dynamics on familiar records to a degree we did not know was extractable from the grooves when we listened through lesser amplifiers."

A new recording and playback medium has made the power and accuracy of Carver amplifiers even more necessary for committed music lovers. If you haven't heard the fantastic dynamic range of the new Compact Digital Audio Discs, you're in for a wonderful surprise. If you have, you'll agree that the sheer sonic impact of this recording medium makes underpowered amplifiers not only inadequate, but potentially fatal to even the best speakers.

You can increase your enjoyment of any kind of music by selecting one of four Carver Magnetic Field Power Amplifiers: The Carver M-200t (120 watts/channel), the Carver M-400t, (201 watts/channel), the Carver M-500t (250 watts/channel) and the Carver M-1.5t, which provides 600 watts per channel long-time-period reserve power into 8 ohms, and up to 750 watts per channel Dynamic Headroom.

Or, you may choose from one of three Carver Receivers ranging from 200 to 90 watts per channel.

Any of these choices will open up new worlds of listening enjoyment as your speakers are finally given the freedom to fully reproduce the music you enjoy.

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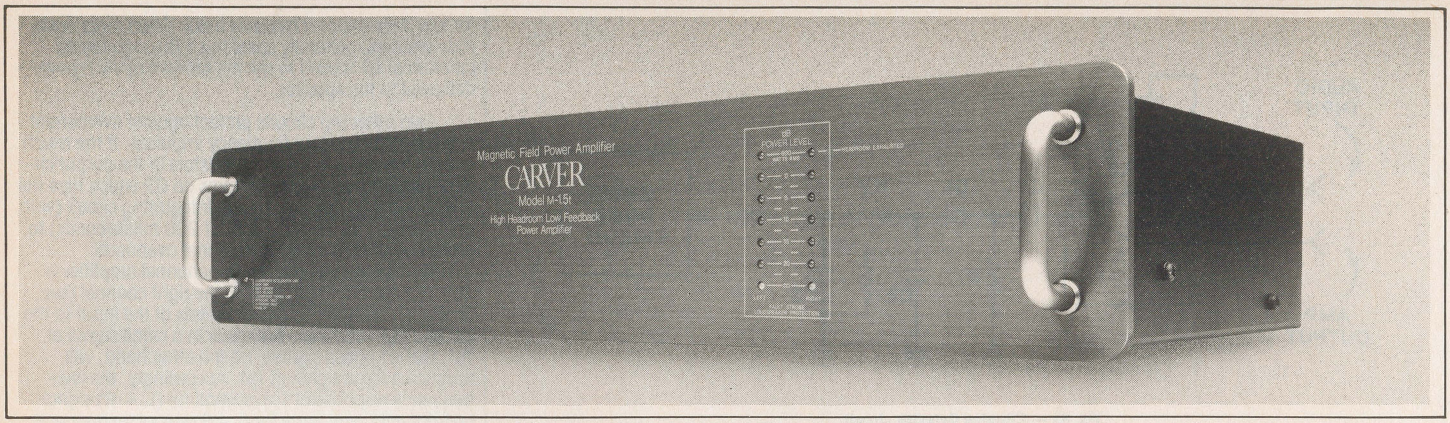

CARVER M-1.5t

MAGNETIC FIELD POWER AMPLIFIER

Our M-1.5t description starts out with a story instead of the usual superlatives.

Once, Bob Carver visited a famous sound researcher who was attempting to recreate the "snip" of an ordinary pair of scissors. He used no less than TWENTY-FOUR 200-watt amplifiers for playback, yet when viewed on an oscilloscope it was apparent that the top of that instantaneous transient was being distorted. Believe it or not, he needed more power! It was evident that real-world sound occurs very quickly and requires far more power than ANY current amplifier could produce.

The M-1.5t is a culmination of Bob's search for Enough Power, the ultimate amplifier for the reproduction of music today and for years to come.

Why such massive amounts of amplifier power? Music is full of surprises such as explosive crescendos, combinant crests of demand created by multiple instrument sounds and the shock levels that some well-recorded instruments can instantly attain. This is what makes music live. These incredibly intense bursts of sound don't necessarily have to be loud. They are too short in duration. But, like the scissor snip, they are intense and demand power.

Recorded music sounds dull without these constantly-occurring, high-intensity peaks.

If your amplifier cannot provide the instantaneous power to surmount these rigorous musical punches when they are presented at its inputs, it makes a sound of its own devising, literally an electronic gagging we call clipping.

The result is an audible degradation which has pervaded your listening for years. A form of distortion which has been difficult to avoid until the M-1.5t arrived.

How can the M-1.5t weigh less than some preamps and yet pack more muscle than power amps weighing FIVE times as much?

The M-1.5t vs. convention. A traditional amplifier's power supply has only two chances during each AC line voltage cycle to recharge and store energy. To meet musical demands inbetween, it must maintain a reservoir of energy, which means that as conventional amplifiers grow more powerful, their transformers and supply capacitors must grow proportionately larger, too. The result is a vast increase in size, mass, heat and expense.

Light as a preamplifier, cool as a cucumber, the M-1.5t transforms almost *all* of the energy it draws into useable audio power with a patented power regulator. Engineered to be directly responsive to the moment-to-moment power requirements of your music, it is a direct "valve" from the power circuits of your house with no need for inefficient intermediate storage. Your speakers are literally getting their energy from the power generator! This is done with a patented Triac switch and Magnetic Field Coil which actually spend most of their time stepping UP the line voltage values and only deliver maximum line voltages at times of peak musical demand.

Rating the M-1.5t. The conservative 350 watt per channel rating on the back of the M-1.5t only hints at its true capabilities. When a musical note sounds, each channel of the M-1.5t immediately puts out up to 600 watts, diminishing over several seconds to the rated 350 watts.

Several seconds is a long time in the life of a music waveform. Any peaks requiring anything like 600 watts will come and go in a few HUNDREDTHS of one second. Let the waveform subside for as little as 1/100 of a second and the amplifier resets itself, capable of providing the 600 watts per channel again. Because of the tremendous capacity of the M-1.5t's power supply, there has been no need to isolate the channels. Thus, when pressed hard, either channel is free to BORROW an additional 150 watts from the other for a total of 750 watts.

Brute power controlled. Implicit in this much power is a set of carefully designed speaker and amplifier protection circuits. Should you ever overload your amplifier, a unique clipping eliminator circuit pulls the M-1.5t out of clipping.

Next we designed a set of total shut-off mechanisms into the M-1.5t to protect against 1) temperatures above 70°C, 2) excessive out-of-phase infrasonic/low frequency signals, 3) excessive DC currents. Your speakers are protected from ungrounded line-level connections, oscillation, and real-world accidents like shorted speaker wires.

The M-1.5t's final protection mechanism is very special. While good speakers have voice coil heat dissipation safeguards, the M-1.5t also keeps track, actually averaging loudspeaker input and "remembering" for about three minutes backward in time. If it judges the amount to exceed the safe limits for high quality loudspeaker woofer voice coils, it will momentarily interrupt power to cool them.

A window on power. Thirteen LED's on the M-1.5t's face simply monitor power. The fourteenth signals headroom exhausted. (When it blinks at high levels, you know the special anticlipping circuits are operating.)

The fifteenth LED is a diagnostical fault indicator. Along with first two LED's, and an internally-generated tone, it informs you of overload problems, routine protection shut down and other occurrences.

The music of power. Of the Carver M-1.5t, Peter Aczel, Editor and Publisher of *The Audio Critic* has said, "... the equal of any power amplifier in transparency, focus and smoothness and, of course, far ahead of any other we tested in sheer gut-shaking power and dynamic range. We especially enjoy hearing spatial detail, instrumental definition and completely natural dynamics on familiar records to a degree we did not know was extractable from the grooves when we listened through lesser amplifiers. At this level of sonic performance, the astoundingly small size and cool operation of the M-1.5t become the icing on the cake, rather than the main attraction."

Power for life. The Carver M-1.5t is all the amplifier your hi-fi system will ever need. If you like the final edge of reality in your playback, no matter what sound level you choose, the M-1.5t is your answer. Are you ready?

Specifications M-1.5t

POWER: 350 W/CHANNEL INTO 8 OHMS, 20Hz TO 20kHz, WITH NO MORE THAN 0.5% THD

Long-time-period Reserve Power: 600 W/channel into 8 ohms

S/N: >100dB IHF A-weighted
Freq. Bandwidth: + 0, −3dB 1Hz to 100kHz
I.M. Dist: 0.15% SMPTE
Slew Factor: >200
Display: LED 1 msec attack 1 sec release
Input Impedance: 100k ohms
Protection: Short Circuit, Voice Coil temperature trip, Clipping, Thermal shutdown, DC offset
Dimensions: 3½"H, 19"W, 10½"D, Weight 16 lbs.

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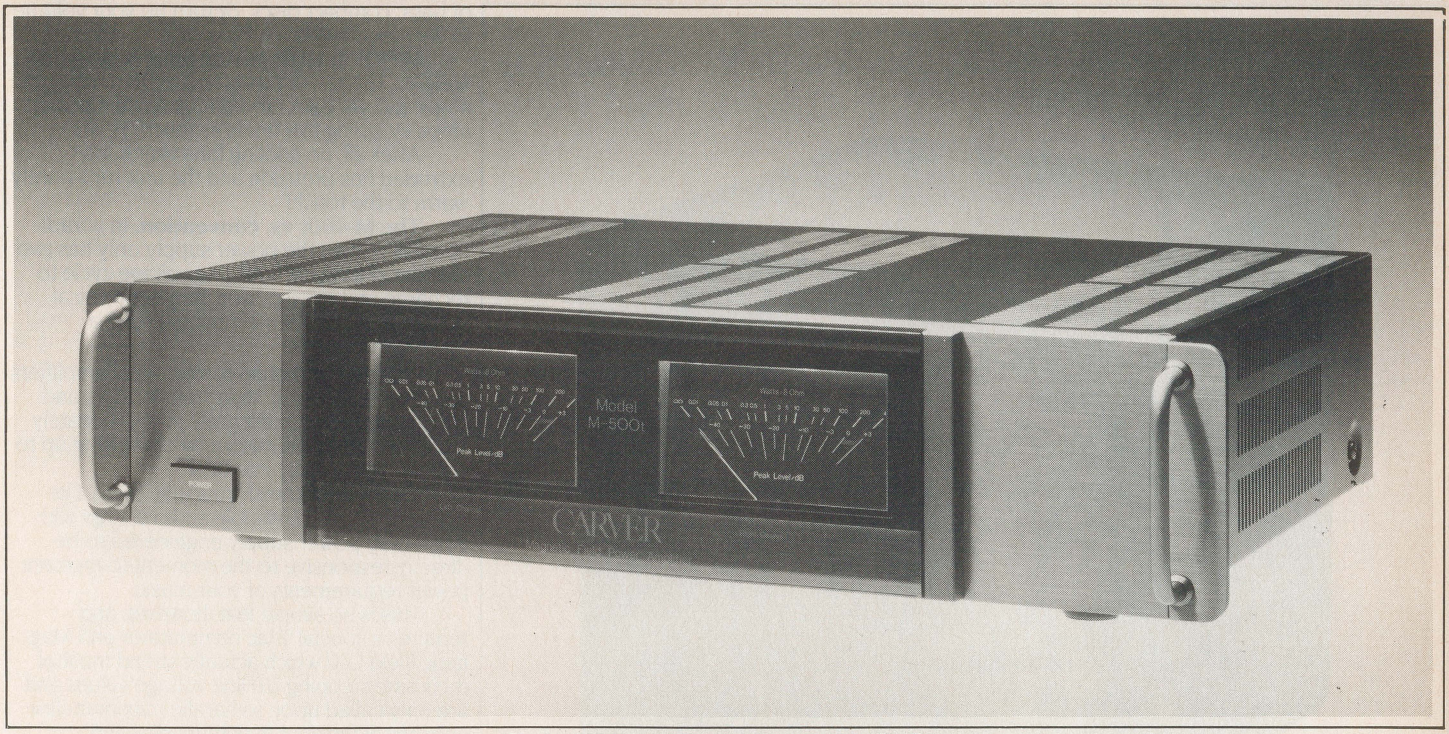

CARVER M-500t

MAGNETIC FIELD POWER AMPLIFIER

Why you need more amplifier power. If you think two hundred and fifty watts a channel with peak reserves of up to 700 watts is overkill, read on. You'll change your mind. The reasons are logical and ultimately surprising.

Power is not loudness. Certainly to play music at high sound levels, speakers do require more power. But we're talking high fidelity, not sound reinforcement. Assume you don't intend to play your music any louder than you do now when you own a Carver M-500t . . . the improvement will *still* be audible.

LOW power kills speakers. NOT high power. A 40-watt receiver can actually burn out a speaker faster than the M-500t! Here's why.

To produce a bass note, a speaker can take up to 80% of an amp's power. If a woofer is to move faster or farther than your receiver can provide power for, the amplifier circuitry generates a high-frequency harmonic spike, a sort of electronic "cry of pain" which is routed directly to the tweeter either producing horrible distortion or eventual burn-out of the tweeter. Thus the tweeter (and your ears) are punished for the woofer's inability to get power from a *weak* amp.

Adequate power makes an audible difference. While the burned tweeter example is an extreme one, some audible clipping occurs virtually every time a low bass pulse sounds, even at moderate listening levels. The strike of a floor tom, beat of a tympani or snap of a Fender bass all can draw short peaks of over 500 watts per channel. When your modestly-powered amplifier can't handle it, there are audible consequences.

Prove it to yourself by auditioning good speakers with the Carver M-500t and any 100-watt unit. It won't take a Golden Ear to hear the tight, crisp bass notes and the sudden absence of annoying high-end distortion you previously accepted as a normal part of music: The M-500t's power is freeing your entire signal chain from the tyranny of insufficient power!

And if the new digital Compact Discs excite you, healthy power reserves are mandatory. Digital technology's tremendously expanded dynamic range taxes the best conventional amps and makes many more obsolete.

Why you'll want the Carver model M-500t Magnetic Field Power Amplifier.

If you're wisely sold on the electronic and sonic benefits of generous power resources, now we'll explain why you needn't invest in a massive "arc welder" power amp to satisfy those needs.

While the M-500t is a bit larger than our remarkable M-400t cube amp, it weighs just 22 pounds. Less than some preamps!

No cooling fans vent its backside; no extruded fins protrude; the unit runs barely warm to the touch.

In contrast, conventional amps continually court meltdown by converting up to 60% of their energy into heat. The M-500t transforms fully 80% of its energy into useable audio energy. Thanks to a more advanced, more elegant and more practical approach to the design of power supply sections. Gone are the coffee-can sized capacitors, massive power transformers and gigantic heatsinks found in old-style high-power amps costing thousands of dollars.

In their place is a patented, compact Magnetic Field coil which stores and controls energy, eliminating all need for heavy, costly parts required by the very best traditional designs.

Instead of two mono amps with dual transformers, capacitors, etc., each channel of the M-500t can actually BORROW unused power from the other channel during peak loads. Indeed, the M-500t can be operated as a 700-watt mono amp without any special switching!

Conventional amplifiers are crude next to the M-500t's micro-computer monitor system. Instead of controlling input stages, causing delays and distortion, the M-500t's computer acts as a FINAL gate, just before the speaker terminals, for instant overload protection. Thus sonic perfection stands no risk of being marred even while fully protecting your valuable loudspeakers against potential damage.

Dual, lighted, precision VU-ballistic meters provide a musically accurate picture of power output averaging yet react instantaneously to important transients.

We made sure the M-500t has a completely neutral signal path transparent in sonic character, resulting in zero listener fatigue. First compare the power, musicality and accuracy of the M-500t to any traditional amplifier made.

You'll be impressed by the superb, colorless sound of the cool, unruffled, light-heavyweight M-500t.

Specifications M-500t

POWER: 251 W/CHANNEL INTO 8 OHMS, 20Hz TO 20kHz, WITH NO MORE THAN 0.15% THD

Long Term RMS Power for Music: 500 W/channel into 2 ohms; 450 W/channel into 4 ohms; 300 W/channel into 8 ohms

Bridged Power: 700W at 8 ohms
S/N: >120 dB IHF A-weighted
Freq. Bandwidth: +0, −3dB 1Hz to 100kHz
I.M. Dist: .05% SMPTE
Slew Factor: >200
Display: Peak responding meters; 5 msec attack, 1 sec decay
Input Impedance: 15K ohms
Protection: Short Circuit, Thermal shutdown, DC offset
Dimensions: 3½"H, 17½"W, 12½"D, Weight 23 lbs.

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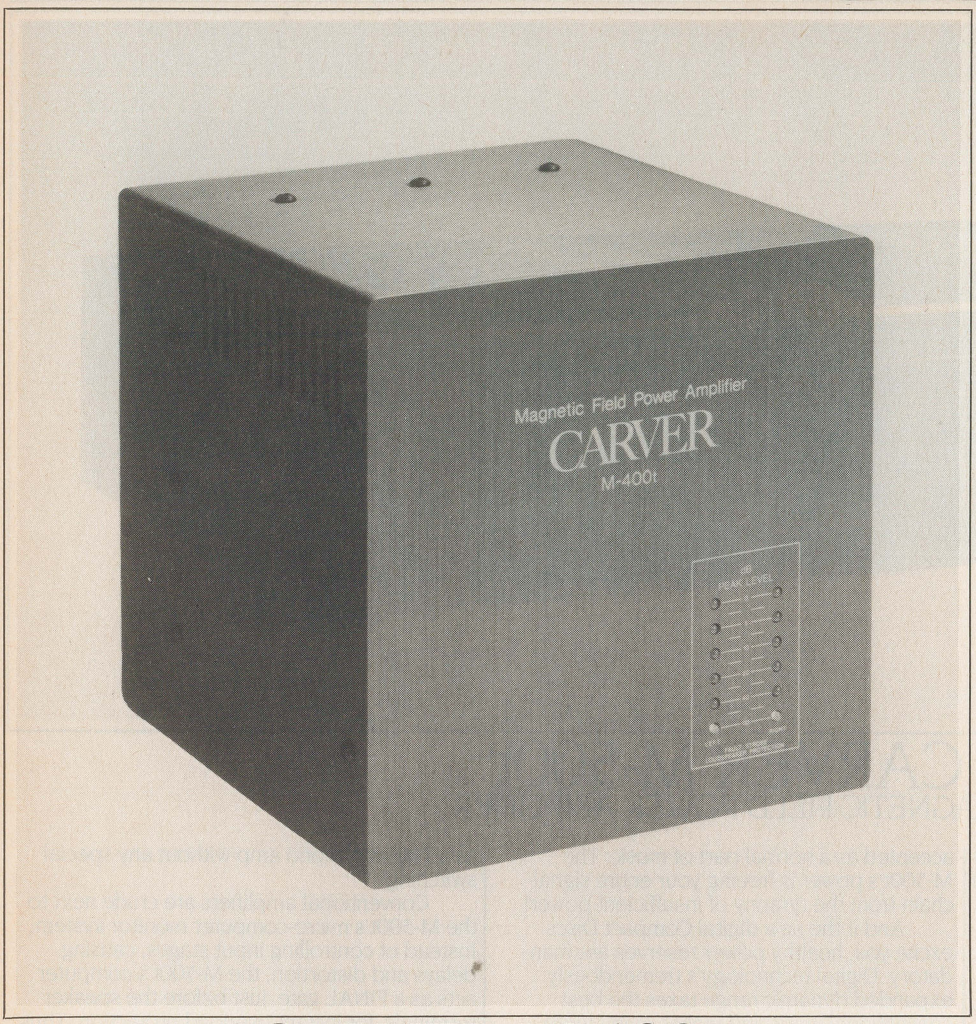


CARVER M-400t

MAGNETIC FIELD POWER AMPLIFIER

Why 201 watts per channel? Does the remarkable Carver M-400t put out more power than you ever considered necessary for accurate music reproduction at normal listening levels? The surprising fact is, you need every watt of the power provided by this remarkable little ten-pound cube. Here's why.

Music is full of surprises such as quick transients, combinant crests of demand created by multiple music waveforms and the explosive levels that some well-recorded instruments can instantly attain. We hear all this in live music; indeed, this is what makes music live. But we don't hear these incredibly intense bursts of sound as being loud—they are too short in duration—just *live*!

Nonetheless these lightning-fast, high-intensity peaks MUST be reproduced to make recorded music feel real.

And that's up to the power amplifier. If the amplifier cannot provide the instantaneous power to surmount these rigorous musical peaks, it makes a sound of its own devising, literally an electronic squeal of anguish. It may be an inoffensive "click" at low levels, a sound you've come to accept as part of the music—or it may be an annoying "snap" which we call clipping, an ominous sign the amplifier's reserves are being drained with each waveform.

That sound is proof of the audible degradation of your system sound when adequate power is lacking. Prove it exists, compare the M-400t and any lower-powered amplifier with the same signal chain and speakers. One sounds crisp and fresh. The other vaguely muddled, even at low volumes.

Manufacturers of underpowered electronics have helped foster several myths we'd like to address after you've convinced your ears that 201 watts/channel is musically refreshing.

MYTH 1. Power means loudness. The point of more power is to have much of it in *reserve*, not to blast the neighbors. We don't expect for you to play your music any louder than you did when you under-powered your system without an M-400t.

MYTH 2. High power kills speakers. Actually, LOW power destroys many more speakers. Yes, illogical as it may seem, the lowly 40-watt receiver can "kill" a speaker far faster than the M-400t!

When an amplifier can't put out what a speaker demands, it sends a nasty spike of high frequency sound out to the speaker, which is routed to the easy-to-burn-out tweeter. Which often does. The less power your system has, the more chance there is these clipping spikes will occur when you play music with lots of bass, compact discs, or turn up your volume to very loud levels.

MYTH 3. High power means heat and weight. The M-400t weighs less than most preamps and yet packs more muscle than power amps weighing five times as much. How?

After all, no cooling fans vent it, no extruded fins protrude and the unit runs barely warm to the touch!

The M-400t vs. convention. In a traditional amplifier, the power supply only has two chances during each AC line voltage cycle to recharge and store power. To meet musical demands in between it must maintain a reservoir of power.

This means that as conventional amplifiers grow more powerful, their transformers and supply capacitors must grow proportionately larger and court meltdown by converting up to 60% of their energy into heat.

The M-400t transforms fully 80% of its energy intake into useable audio energy with a patented power supply engineered to be directly responsive to the moment-to-moment power requirements of your music.

This is no simple feat, however, and requires a special Triac commutator and Magnetic Field Coil which actually spend most of their time stepping UP line voltage values and are only called upon to handle maximum line voltages at times of maximum demand.

Sophisticated protection for your system. The M-400t dutifully responds to musical input and will transmit those demands to your speakers . . . which will get quite a work-out. To prevent damage, the M-400t has an elaborate logic-controlled protection system, and to prevent clipping and over driving. The system simply shuts down output for several seconds before resumption, testing output demand before continuing. Should the problem be a short or other massive malfunction, no damage can occur.

Physically the M-400t is simplicity itself. Only a matched set of power LED's accent its front. Volume is controlled by the input signal eliminating the need for gain controls.

The M-400's back utilities are spare and to-the-point: speaker terminals and input sockets.

The most important test. Hardware, buzzwords and specmanship aside, your final decision should be made by the sound of an amplifier. Compare the Carver M-400t to any 200-250 watt/channel conventional power amplifier around, Class A, B, H, G, Z, Q or otherwise. The class that stands out will be the superb colorless sound of the cool, unruffled, light-heavyweight M-400t. Powerful. Musical. Accurate and, above all, affordable.

Specifications M400t

POWER: 201 W/CHANNEL INTO 8 OHMS, 20Hz TO 20kHz, WITH NO MORE THAN 0.5% THD

Power @ Clipping: 300 W/channel into 4 ohms; 250 W/channel into 8 ohms

Bridged Power: 500W at 8 ohms

S/N: >100dB IHF A-weighted

Freq. Bandwidth: +0, −3dB 1Hz to 100kHz

I.M. Dist: 0.05% SMPTE

Slew Factor: >135

Display: LED Peak responding 1 msec. attack .5 sec decay

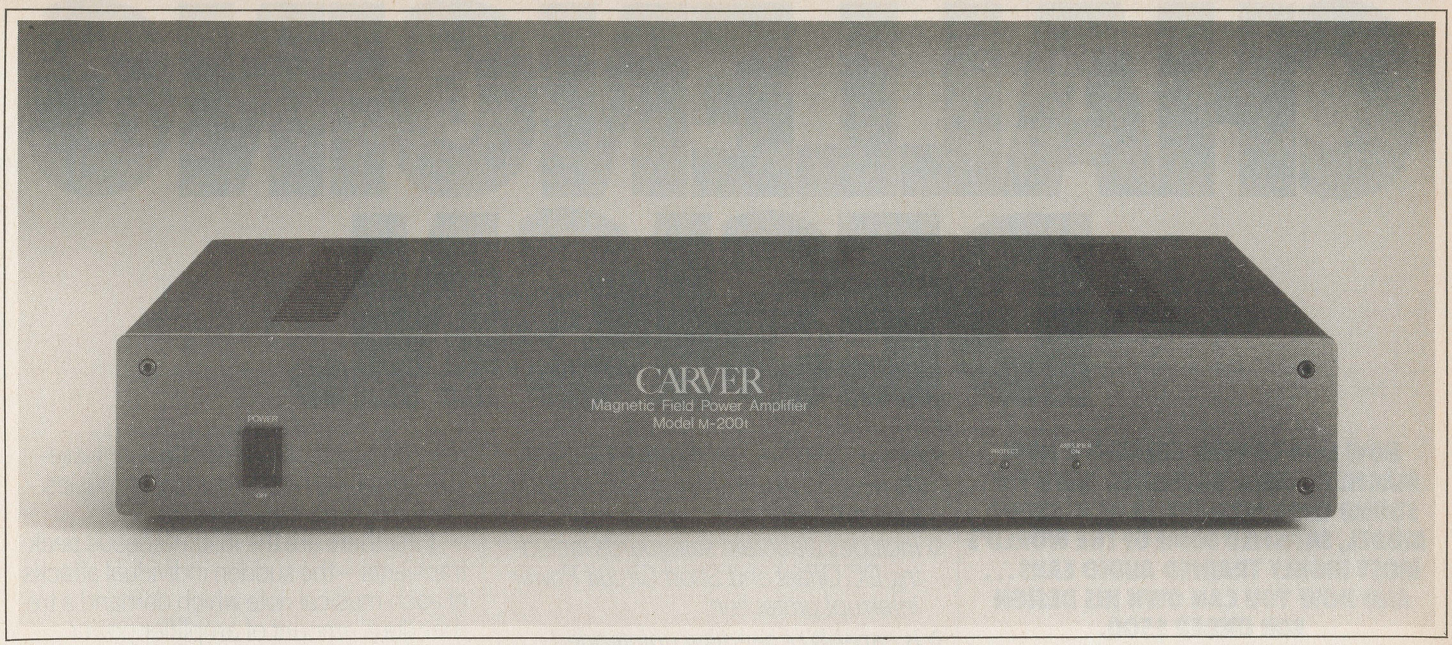
Input Impedance: 30k ohms

Protection: Short Circuit; Voice Coil temperature trip; Clipping; Thermal shutdown; DC offset

Dimensions: 6 3/5" cube, Weight 9 lbs.

ALL SPECIFICATIONS OR FUNCTIONS SUBJECT TO CHANGE WITHOUT NOTICE.

C A R V E R



CARVER M-200t
MAGNETIC FIELD POWER AMPLIFIER.

The smallest Carver Magnetic Field Power Amplifier is more powerful than most company's largest amplifiers!

Once you have heard the M-200t, you will wonder how you managed with less power. Because any less power regularly submits your ears to audible distortion called clipping. At moderate levels, you may not think you notice it. But that's because underpowered TV's, car radios, portable sound sources and virtually all low powered hi-fi components have made us accustomed to the haze of minute distortions which occur thousands of times per minute.

The M-200t has the reserves of power necessary to allow your speakers to complete each musical waveform . . . instead of snapping it off. The resulting clarity can restore a surprising amount of impact and detail to your existing records—played over your existing speakers with no further modifications.

Yet it is with the emergence of digital recording and playback technology that the M-200t stops being a luxury and turns into an absolute necessity. When you first hear a CD, your ideas of "loudness" and "softness" are completely overturned. Digital holds surprises with every passage, ranging from utter silence to exploding power that taxes your whole hi-fi signal chain, causing clipping distortion that isn't subtle anymore. The kind of clipping which can actually damage speakers.

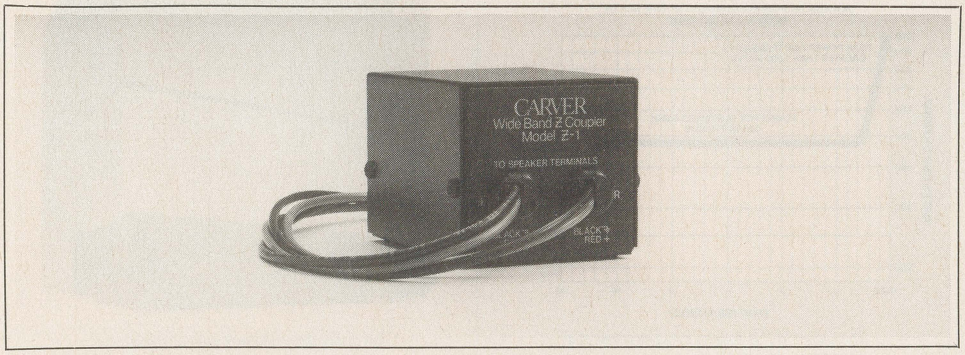
The simple answer is to add the M-200t with its remarkable amplifier and speaker protection circuitry. This Magnetic Field Amplifier has the ability to deliver the power needed for digital in a cool-running package a THIRD the size of traditional amplifier designs.

Its sophisticated amplifier and speaker protection circuits monitor conditions that could damage your equipment, shutting the M-200t down before problems occur. Voice coil overheating, longterm clipping, catastrophic short circuit and even excessive DC voltages are problems which the M-200t is designed to automatically circumvent.

The result is the freedom to truly enjoy Compact Discs or any other music source at realistic listening levels. If you're interested in upgrading your system with a minimum outlay of money and maximum immediately audible sound improvement, visit your Carver dealer soon. You'll discover that even a "small" Carver amplifier can make a LARGE increase in your listening enjoyment.

Specifications M-200t

POWER: 120 W/CHANNEL INTO 8 OHMS, 20Hz TO 20kHz, WITH NO MORE THAN 0.15% THD
Power @ Clipping: 200 W/channel into 4 ohms; 130 W/channel into 8 ohms
Bridged Power: 350W at 8 ohms
S/N: >100dB IHF A-weighted
Freq. Bandwidth: +0, −3db 1Hz to 100 kHz
I.M. Dist: 0.15% SMPTE
Slew Factor: >100
Display: Power/Protection LED
Input Impedance: 100k ohms
Protection: Short Circuit, Voice Coil temperature trip, Clipping, Thermal shutdown, DC offset
Dimensions: 2.55"H, 17.32"W, 9.20"D, Weight 10.25 lbs.



CARVER Z-1
WIDE BAND Z COUPLER

While CARVER Magnetic Field Power Amplifiers are usually found in systems which are controlled by a preamplifier, a growing number of serious audiophiles with modest budgets utilize a Magnetic Field Power Amplifier (connected through a CARVER Z-1 Wide Band Z Coupler) with low-power receivers or integrated amplifiers.

The CARVER Model Z-1 Wide Band Z Coupler is an impedance matching device which enables a receiver or integrated amplifier to be used with CARVER Magnetic Field Power Amplifiers.

Many low-powered receivers and integrated amplifiers have excellent phono stages and line amplifiers. However, their power amplifier sections, in addition to being underpowered, are frequently incapable of even mediocre performance with many loudspeaker loads.

The Z-1 presents an optimum noninductive load to the power amplifier in the low-power receiver or integrated amplifier. When coupled with the Z-1, the outputs of the receiver or integrated amp are used to drive the CARVER Magnetic Field Power Amplifier. The result is awesome sonic performance from a relatively inexpensive system.

Dimensions: 2 x 2 x 2¾"

ALL SPECIFICATIONS OR FUNCTIONS SUBJECT TO CHANGE WITHOUT NOTICE.

CHALLENGING DESIGN.

HOW BOB CARVER CREATED A NEW MAGNETIC FIELD AMPLIFIER WITH THE SOUND CHARACTERISTICS OF A $3000 MODEL, SATISFIED SOME OF THE WORLD'S MOST HIGHLY TRAINED AUDIO EARS... AND HOW YOU CAN OWN HIS DESIGN FOR UNDER $500.

Bob Carver's newest Magnetic Field Amplifier is sending shock waves through the staid audiophile world. Because it won a challenge that no other amplifier designer could even consider.

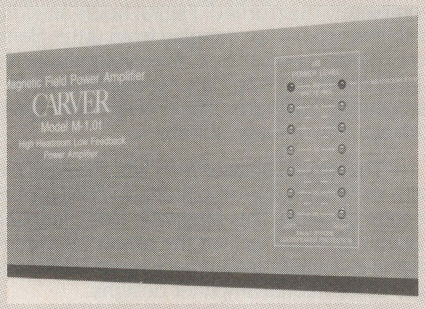
The M-1.0t was judged, in extensive listening tests by one of America's most respected audiophile publications, to be the sonic equivalent of a pair of legendary, esoteric mono amplifiers which retail for over fives times as much.

A DESIGN FOR THE CHALLENGE OF MODERN MUSIC REPRODUCTION.

Before you learn the fascinating details of Bob Carver's unprecedented feat, let's consider the final product of that challenge. An amplifier design which stands on its own merits in any case, with astonishingly high voltage/high current output and exclusive operation features. An amplifier for the demands of compact digital discs, VHS Hi-fi and other wide dynamic range playback media.

THE M-1.0t:

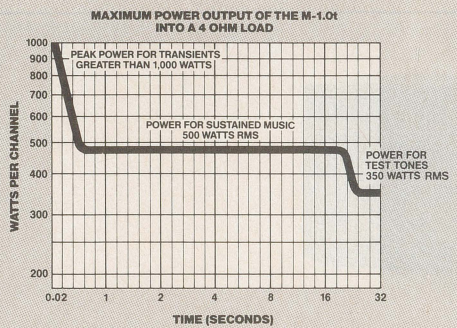
- **◊ Has a continuous FTC sine-wave output conservatively rated at 200 watts RMS per channel into 8 ohms from 20Hz to 20kHz with no more than 0.15% THD.**
- *◊ Produces 350-500 watts per channel of RMS power and 800-1100 watts peak power for transients. (8 ohms and 4 ohms respectively).*
- *◊ Delivers 1000 watts continuous sine wave output at 8 ohms in bridging mode without switching or modification.*
- *◊ Employs Bass Phase Inversion circuitry that can essentially double current output at low frequencies.*
- *◊ Has a -110dB signal-to-noise ratio and no need for noisy external fan, making it exceptionally quiet.*
- *◊ Includes elaborate safeguards including DC Offset and Short Circuit Power Interrupt protection.*
- *◊ Is capable of handling unintended 1-ohm speaker loads without shutting down.*
- *◊ Uses a power display capable of 1 millisecond peak response time and instant warning of clipping.*



Accurate to as little as 1dB, the M-1.0t's 2-color power meters respond within a millisecond of a transient impulse, identify momentary clipping and serve notice of protection circuit activation.

POWER FOR THE CHALLENGES OF MUSICAL WAVEFORMS.

The rating differences between the M-1.0t's FTC and Carver's continuous



The Carver M-1.0t delivers massive power at all important output levels.

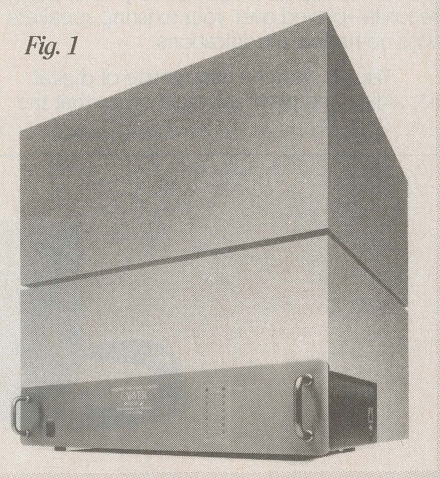
RMS power reserves represent Bob's insistence that electronic designs should address real world problems. He reasoned that the M-1.0t must excel at reproducing those types of power waveforms that are most essential to music's stunning impact and realism.

First there are the instantaneous peak transients—the sudden individual attacks of each musical note which demand a tremendous amount of amplifier power. While these waveforms last less than 1/100 of a second, they form the keen edge of musical reality.

Next come combinant musical crests of demand from multiple instruments and their harmonics. These longer-term power demands usually come and go in less than a second, yet can tax all but the most powerful amplifier.

Thus, even at 8 ohms and at extremely high output current levels, the Carver M-1.0t not only delivers over 800 watts of peak power for momentary musical transients, but can provide over 350 watts RMS of long-term power for demands lasting up to 20 seconds. More power, more current and more voltage than any other comparably-priced amplifier.

Fig. 1



Two distinctively different approaches to sonic excellence.

THE MAGNETIC FIELD AMPLIFIER VS. CONVENTION.

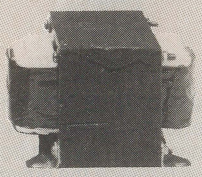
Audiophiles, critics and ultimately other manufacturers have accepted

the wisdom of Bob Carver's innovative approach to delivering power in musical terms. Yet only Carver has so elegantly translated theory into practice.

Figure 1 shows the new Carver M-1.0t Magnetic Field amplifier. It weighs 20 pounds and runs cool to the touch. Behind it is the outline of the *pair* of legendary mono amplifiers you'll read more about below. Even individually, they can hardly be lifted and demand stringent ventilation requirements. And yet, according to some of the most discriminating audiophiles in the world, Bob's new design is their sonic equal.

The ultimate secret lies in the patented Magnetic Field Coil (figure 2) employed in the Carver M-1.0t. Instead of increasing cost, size and heat output with huge storage circuits, Magnetic Field Amplification delivers its awesome output from this small but powerful component. The result

Fig. 2



A single Magnetic Field Coil supplants traditional heavy power supplies.

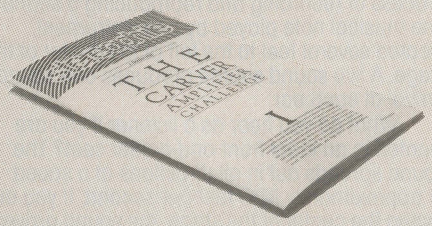
is a design capable of simultaneous high current and high voltage. A compact cool-running design that fills your room with sound, not bulk.

CARVER'S GREAT AMPLIFIER CHALLENGE.

On the merits of its enviable specifications and features alone, the M-1.0t could easily have become another industry benchmark of power, accuracy and economy.

But Bob is never satisfied. He felt that his fifth Magnetic Field Amplifier design should be even more remarkable.

So last year, he made a bold offer to the editors of *Stereophile Magazine,* one of America's most respected audiophile publications. He claimed that he could make special modifications to his new amplifier design which would enable it to sound EXACTLY like any high-priced, esoteric, perfectionist amplifier (or amplifiers) the editors could choose.



Moreover, his design work would not happen in his Lynnwood, Washington laboratory, but in a motel room near *Stereophile's* offices in New Mexico. And would match the M-1.0t's final sound to any contender in *48* hours!

As the magazine put it, *"If it were possible, wouldn't it already have been done? Bob's claim was something we just couldn't pass up unchallenged."*

Out of respect, ethics (and even a little bit of awe), neither *Stereophile Magazine* nor Carver will divulge the name of the legendary "world class" mono vacuum tube amplifiers that were selected as the M-1.0t's contender.

Suffice to say that what transpired in the next 48 hours is high fidelity history. It makes great reading in *Stereophile,* Vol. 8, No. 6, or in the reprint we'll send you on request.

MUSIC IS THE FINAL PROOF.

The *Stereophile* evaluation team was admittedly skeptical (*"We wanted Bob to fail. We wanted to hear a difference"*). They drove both amplifiers with some of the finest components in the world. Through reference speakers that are nothing short of awesome.

But it was their ears and carefully selected music ranging from chamber to symphonic to high-impact pop that led them to write, *"...each time we'd put the other amplifier in and listen to the same musical passage again, and hear exactly the same thing. On the second day of listening to his final design, we threw in the towel and conceded Bob the bout. According to the rules... Bob had won."*

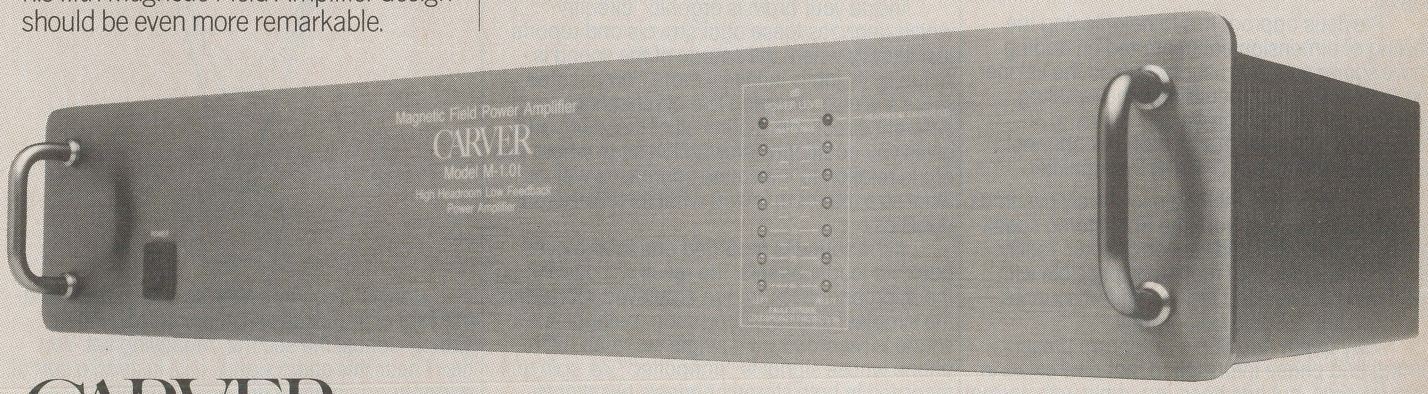
The inquiring audiophile can't help but wonder if M-1.0t production models will sound as good. Ask the man who designed it. "I promise they will sound exactly the same. And just as good. In fact, I stake my reputation and that of our company on it."

SHARE THE CHALLENGE AND THE VICTORY.

The real winner is you. Because you can own world class, superlative electronics at reasonable prices by visiting your nearest Carver dealer. Compare the new M-1.0t against any and all competition. Including the very expensive amplifiers that have been deemed the M-1.0t's sonic equivalent. But even if you can't make that comparison, you won't be surprised when the M-1.0t lives up to every other claim made in this ad.

What you will be surprised at is just how affordable this much power, musicality and accuracy can be.

SPECIFICATIONS: Power, 200 watts/channel into 8 ohms 20Hz to 20KHz, both channels driven with no more than 0.15% THD. *Long term, sustained RMS power,* 500 watts into 4 ohms, 350 watts into 8 ohms. *Bridged Mono RMS power,* 1000 watts into 8 ohms. *Noise,* -110dB IHF A-Weighted. *Frequency Response,* +0-3dB 10Hz-100KHz. *Slew Factor,* greater than 200. *Weight,* 20 lbs. *Finish,* light brushed anthracite, anodized.



CARVER Corporation, PO Box 1237, Lynnwood, WA 98046

POWERFUL MUSICAL ACCURATE

Distributed in Canada by Evolution Technology

C A R V E R

CLOSER TO REALITY.

THE MAGIC OF SONIC HOLOGRAPHY.

Why did stereo catch on back in the Fifties? Why aren't we perfectly content listening to mono? The answer is obvious, you say: Stereo is more lifelike.

True. Slightly more lifelike. The way a color photo is more "realistic" than a black and white photo. Yet, like these two-dimensional representations, stereo is a compromise when compared to reality. No matter how good your speakers are, no matter how good the sound source is, the results are only barely comparable to a live performance.

Conventional stereo sound is an illusion, and for some listeners not a particularly successful or convincing one. Stereo reproduction is subject to fundamental distortions of spatial perspective, sufficiently severe that no six-year-old with normal hearing will be fooled into confusing a stereo playback with a real, live sonic event.

Consider, by analogy, the illusion of depth perspective that is provided in drawings and paintings by converging straight lines and the hazy reduction of contrast in "distant" objects. The geometry of perspective is part of the perceived real world, and rendering it is an essential requirement for any realistic painting. Still, few people viewing paintings have ever been fooled into believing they were looking through a window at a real three-dimensional scene. And while stereo sound is both more realistic and more pleasing than monophonic reproduction, it is still only an attractive illusion.

Rather, the imaging of stereo is an acquired taste which audiophiles learn to be sensitive to—acclimating to its unnatural perspective in order to enjoy the portrait of sound which the stereo system paints upon the wall between the loudspeakers.

In reality, sound approaches you not just head on but from the sides and from behind. It reverberates through a room, giving you cues as to not only the position of the performers but your position as well. Incidently, this sort of sonic information is not limited just to classical music recorded in a concert hall. Multi-track pop music also contains ambient and reverberant information. After all, a guitar amp, drum or saxophone are played and recorded in a three-dimensional space. It's just not very apparent listening to stereo.

Previous approaches to heightening the feeling of dimension concentrated on adding more sound sources, usually behind the listener. On certain kinds of recordings, the resulting reverberant effects can be very pleasing. In fact, we incorporate this type of rear channel enhancement on our C-4000 Preamplifier.

Still, using this method exclusively assumes that what is coming from the front stereo speakers is the best possible version of sonic reality. Bob Carver knew that more was possible with just two speakers and regular sound sources.

The key is Sonic Holography.

Very briefly, the Sonic Hologram presents timing and phase information that now exists in your records, but has been inaudible with normal stereo components. With Sonic Holography, this information emerges in three-dimensional space around the listener. The precise location of instruments and voice can be pinpointed.

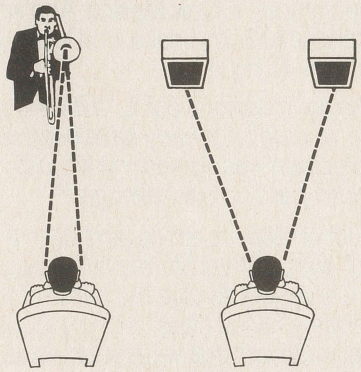
As one reviewer put it, "The effect strains credibility... the miracle is that it uses only the two normal front speakers."

Why is Sonic Holography so much more lifelike and how does it achieve the effect with normal stereo records?

First let's consider stereo. The problem is simple: Each ear hears both speakers.

To see why this is important, consider the process of recording and reproducing a sound—one musical note played by one instrument, located several feet to the left of the center of the stage. A live sound source produces one sound arrival at each ear.

What do you hear as a listener if you are located in an ideal front-and-center seat? The sound spreads out in all directions at a speed of approximately 1100 feet per second. If you are facing the center of the stage, the sound arrives at your left ear first and at your right ear very shortly afterward—how long afterward depends on its angle of arrival.



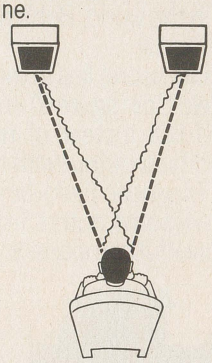
If the sound source is exactly in front of you, identical signals arrive at both ears at the same time. Since the instrument in our example is only a few feet left of stage center and so is only slightly to the left of front (rather than 90 degrees around to the left), the arrival of the sound at your right ear is delayed by a small fraction of a millisecond and since your head blocks high frequencies, but isn't large enough to be an effective barrier for lows, your right ear receives a sound that is slightly filtered by the acoustic shadow of your head.

Inside your brain is organic "circuitry" which analyzes these dual arrivals and reports just exactly where the source of the sound is. Actually, its job is infinitely more complicated since it is also receiving lots of reflections from different directions. It sorts all of these out and gives you additional information as to where you are in relation to the sound source, as well as what size the room is and what its reverberant qualities are.

If the sound is recorded and later played back via loudspeakers, the result will depend on the microphone technique employed. Consider the simplest and most common method: The sound is recorded via a single close-up microphone whose signal is "panpotted" i.e. split and recorded in both stereo channels but slightly stronger in the left channel in order to place its image slightly to the left of center. In playback the sound emerges simultaneously from both speakers (a little louder in the left).

Assume that you are sitting equally distant from the speakers, facing the mid-point between them. The sound from the left speaker arrives at your left ear, and at the same time the sound from the right speaker arrives at your right ear. There's a little difference in intensity and so your ear-brain "circuitry" pinpoints the sound a little to the left of center. Fine so far.

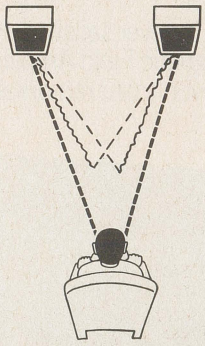
Unfortunately, there was one live instrument ... but there are two speakers. A fraction of a millisecond later the sound from the left speaker, after filtering by the acoustic shadow of your head, arrives at your right ear; and similarly the sound from the right speaker arrives at your left ear. Not so fine.



Remember that in the "live" listening experience the single sonic event produced just two arrivals at the ear; the delay and frequency spectrum differences between the arrivals at the two ears are the primary cues which the brain uses to determine the direction of the sound source.

But now the sonic event has been muddled with a total of four arrivals at the ears. Your ear-brain analysis center can't figure out where the other two sonic events are coming from. This is an undesirable side effect sometimes referred to as Interaural Crosstalk. It results in a smearing of the stereo effect because your hearing mechanism cannot properly perceive all the imaging and spatial information that is being sent out.

The goal of the Carver Sonic Hologram Generator is to eliminate the "extra" set of sonic arrivals that occur with conventional stereo playback, but which do not occur in real life.



Special circuitry analyzes and generates a third set of impulses which are calculated to exactly cancel the second, muddying set. You don't hear this audio signal. It is, instead a sort of mirror image of the extra sonic arrivals, but out of phase so that one set "neutralizes" the other. Thus restoring perception of differences in depth and ambience in the stereo image which are "masked" in ordinary stereo playback.

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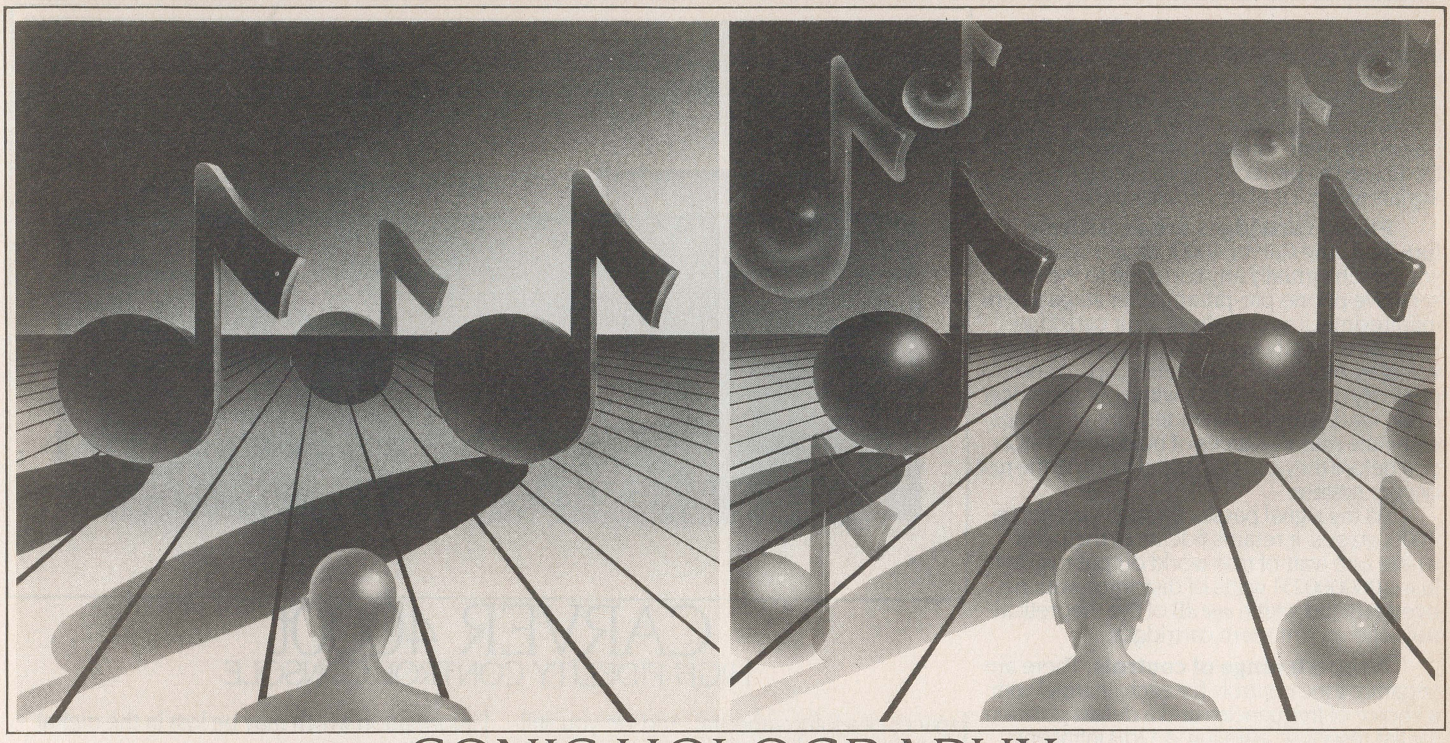
C A R V E R



SONIC HOLOGRAPHY

Live performance: Note that in the concert hall setting the sound is heard with timing and amplitude cues. Three dimensional!

Conventional stereo: Note that when listening to conventional stereo the sound is heard, more or less, on a flat curtain of sound between the two speakers. Volume differences only. The timing cues are gone.

Sonic Holography: With SONIC HOLOGRAPHY, the sound is reproduced much like that of a concert performance, complete with timing, phase and amplitude cues.

To summarize,

- A live sound event consists of
  One set of sonic arrivals at the ear.
- Stereo reproduction consists of
  A first set of sonic arrivals plus a second set that causes interaural distortion.
- Sonic Holography provides
  A special set of cancellation signals that intercept and cancel the distortion-causing sound arrivals of the second set resulting in
  Only one set of sonic arrivals at the ear. (Just as the live performance.)

The ear/brain system can now receive the unambiguous timing and phase information that exists when we listen to real sonic events with only two arrivals—one per ear. A great deal of the subtlety of a real performance, including a clear sense of the size or "sonic signature" of the performance environment can be recovered from the recording, which is all but lost in conventional stereo playback.

The aural sound stage expands beyond the speakers and often beyond the wall of your listening room as well. Instruments, vocalists and sound effects come into focus, each in their own, tangible position. It is if you have adjusted the focus of a telescope. What was blurred becomes sharp. What was narrow is turned into a dramatic panorama.

Can any other methods achieve exactly the same effect? No. Unlike reverberant systems or binaural add-on devices, the Carver Sonic Hologram Generator is not a signal processor per se. It does not change the existing signal, but rather adds extra, invisible cancelling signals.

Why is this process called Sonic Holography?

An optical hologram is a photograph made with a laser whose coherent beam of light is split into two beams and used to illuminate an object; the two beams are recombined, forming alternate rings of constructive and destructive interference, and the interference pattern is photographed. When the picture is developed and another laser is used to project it, a three-dimensional image of the photographed object is projected in space. By analogy, a sonic hologram generator takes the beam of sound produced by each loudspeaker and splits it so that a related beam of sound is produced by the opposite speaker in such a way that acoustic interference patterns of the sound occur in the air near each ear, revealing the true three-dimensional sound image that was hidden in the stereo recording.

Sonic Holography in action is spectacular. You don't need a trained ear to notice the difference. Suddenly the listening field extends wider, higher and deeper than the speakers. You are literally immersed in the performance. But don't take our word for it. Begin by reading what major audio magazines had to say about Sonic Holography.

"When the lights were turned out we could almost have sworn we were in the presence of a real live orchestra." Hal Rodgers, Senior Editor, *Popular Electronics*

"The effect strains credibility—had I not experienced it, I probably would not have believed it... the miracle is that it uses only the two normal front speakers". Julian Hirsch, Hirsch-Houck Labs, *Stereo Review*

"...it brings the listener substantially closer to that elusive sonic illusion of being in the presence of a live performance." Larry Klein, Technical Director, *Stereo Review*

"...seems to open a curtain and reveal a deployment of musical forces extending behind, between and beyond the speakers...terrific." *High Fidelity*

The next step is to visit your nearest Carver dealer and hear one of the four precision components which incorporate Bob Carver's patented Sonic Holography circuitry: The C-4000 and C-1 preamplifiers, The Carver Receiver 2000 and an add-on component, the C-9 Sonic Hologram Generator.

Each not only has the potential to bring your existing record collection alive but also to make Compact Discs all the more stunning. Experience Sonic Holography soon and hear what you've been missing all these years.

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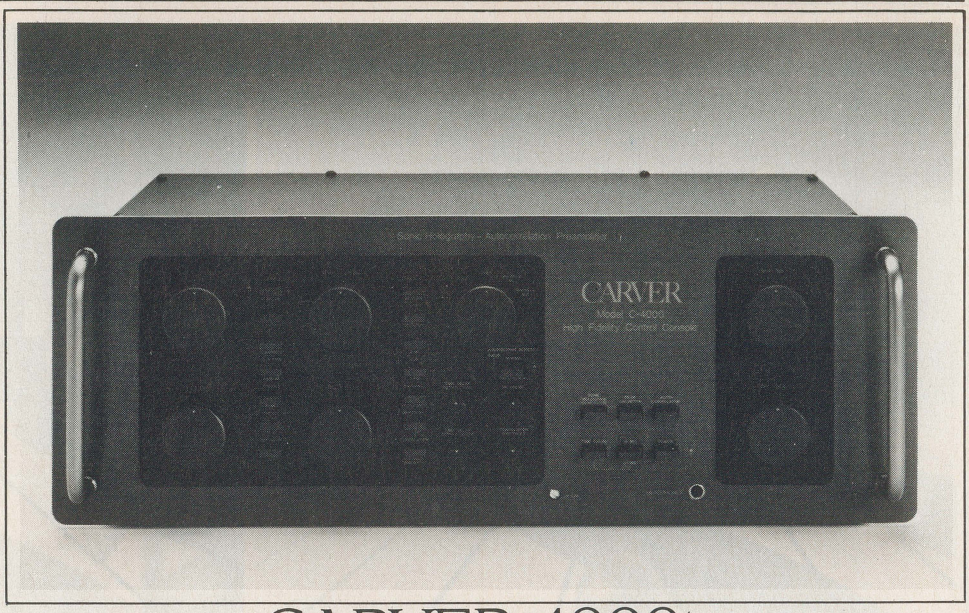

CARVER 4000t

HIGH FIDELITY CONTROL CONSOLE

Under all those controls is, first and foremost, one of the finest audio preamplifiers in the world. Although the 4000t can combine as many as five separate sound enhancement functions, (plus precise shelf equalization), it begins as a fine, "straight wire" preamplifier. Dedicated to perfectly reproducing musical signals without a trace of distortion.

Phono cartridges are sensitively handled. The Carver 4000t phono section lets you match virtually any cartridge to the ultra sensitive phono pre-preamplifier stage where infinitesimal impulses from your cartridge must be perfectly translated into higher level voltages. Along with adjustable capacitance to perfectly match the 4000t with your cartridge/cable load, specially shielded circuitry helps eliminate major sources of noise and distortion before they can be passed along to the rest of your system.

As the signal passes through successive 4000t stages, it retains fidelity to the point where one watt of real-world output results in just 0.000000251 watts of distortion with no overload and within *one dB* of the theoretical noise floor of modern cartridges.

A superb range of controls. There are separate tone controls for each channel with a choice of frequencies and a defeat position for flat response listening. A 12dB infrasonic filter eliminates speaker cone flutter and distortion caused by warped records, acoustic feedback and tone arm resonances. Full dubbing (copying) is possible between two tape decks. A separate headphone amplifier allows private listening. You can instantly check speaker and cartridge phasing with a stereo/mono switch. You may mute speakers instantly to change records or answer the phone without affecting volume settings. Add sound processors and switch them from the front panel.

Sonic Holography at the touch of a button. If you have just read the previous page, you know that Sonic Holography is a complex process with a breathtakingly realistic result.

Sound will suddenly burst forth higher and wider than your speakers. Closer and farther back than ever before—even to the sides of you and behind! Instead of a tiny window, the sound image is a giant panorama, freeing you from the room's dimensions. Without special speakers, you can bring into focus each row of symphony musicians. Often you'll hear each player in a section. The effect on pop rock and country music is dynamic and exciting with a feeling of immediacy and involvement which no 2-dimensional playback system can achieve.

Surround Sound restores the hall. Just as Sonic Holography deepens the frontal hemisphere (the half circle in front of the listener), so the 4000t's Surround Sound circuitry completes the circle of sound, enlarging psychoacoustic room dimensions to nightclub, concert hall or even cathedral proportions. It works by presenting the ear with acoustic cues which it is naturally sensitive to, cues which exist because of the relatively slow speed of sound in air. This delay causes the natural reverberation by which we judge the size of a performance space. By creating rear channel information subtly different than the main front stereo channels, you can be transported to a smoky rock or jazz club, a famous performance hall or opera house...even the vast spaces of a lofty cathedral. And yet you still have the immediacy of front row center, even when the walls of your living room have seemingly dissolved into the vastness of Carnegie Hall.

Eliminate hiss with the Autocorrelator Noise Reduction System. Tape recordings, vinyl, AM & FM, the thousands of CDs transcribed from analog masters and even the rest of your electronics inevitably add hiss to music. Eliminating this final veil between you and reality is achieved in the 4000t with a special circuit which discriminates between random noise and musical information. It strips away hiss from 2kHz to 20kHz. In addition, non-random, low frequency noise such as hum and rumble are removed by a level-sensitive dynamic filter operating exclusively below 200Hz. Thus music emerges from an almost silent background.

Turn video into pure excitement. Needless to say, the complete 360-degree audioscape created by Surround Sound and Sonic Holography is nothing short of stunning when used with stereo video signal sources such as VHS Hi-Fi soundtracks and MTS broadcasts. You will be transported into the movie, with action crashing around you, past you and over your head. Yet thanks to Autocorrelation Noise Reduction, quiet parts of a movie or TV show will not be plagued by the hiss that is present on virtually all video sound tracks—even commercial VHS Hi-Fi tapes.

The Digital Time Lens enhances many CDs. If you own a Compact Disc player or have listened to even a few discs, you'll be struck by the surprising dissimilarity in their tonal and ambiant qualities. Carver's Digital Time Lens Circuitry turns an innovation into near perfection by restoring octave-to-octave frequency balance and correcting the ratio of L-R to L+R information (see page 26 for a complete explanation). On many CDs you will finally not only hear the greater dynamic range, quietness and richer bass you expect from digital technology, but also the warm musicality, spectral balance and special information which may be lost in the digital process.

Exacting craftsmanship and the finest components. Carver has not stinted on any facet of the 4000t's construction. G-10 glass/epoxy circuit boards insure electrical stability year after year. 24K gold contacts on all mating surfaces provide perfect signal transfer while sealed, lubricated controls eliminate noise over the lifetime of the 4000t. High clamping pressure, hot molded external connectors give complete electrical contact. And the metal parts of the 4000t are precision machined (not stamped) for the heft and weight of absolute quality.

A complete instrument for the enjoyment of music. With Sonic Holography, Surround Sound, Autocorrelator and Digital Time Lens, the Carver 4000t presents you with the rare opportunity to enjoy truly realistic sound reproduction. It gives control over the finest nuances of the listening process and allows you to add (or delete, at your wish) remarkable sound enhancement circuitry...yet the Carver 4000t still maintains a place among the finest "purist" audiophile preamplifiers on the market. Audition it today at your Carver dealer and hear the best of many worlds.

Specifications

Distortion: THD 0.05%/IHF IM 0.003%/T.I.M. .0%
S/N: 98dB, re 2V
Phono 1: M.M. 89dB re 5mV @ 47 ohms
Phono 2: M.C. 84dB re 0.5 mV @ 47 ohm
Freq. Resp: 1.5Hz to 60kHz +0, −3dB
Dimensional Restoration:
Horizontal Degrees: +168
Vertical Degrees: +36
Z Axis %: +76%
Equalization: −+6dB @ 8kHz and 2kHz/−+6dB from 40Hz and 150Hz
Noise Reduction: 10dB from 2kHz to 18kHz/10dB from 20Hz to 200Hz
Infrasonic Filter: −3dB at 15Hz, 12dB per octave
Surround Sound: 20 msec independent R/L delay front to rear placement
Dimensions: 19" x 6¾" x 8½", Weight 11 lbs. (5 kg)

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C A R V E R

CARVER C-1

SONIC HOLOGRAPHY PREAMPLIFIER

The C-1 as one of the world's best pre-amplifiers. Forget for a moment the miracle of Sonic Holography.

Concentrate on one of the best pre-amplifiers on the market today. And one of the best *pre*-preamplifiers.

Accurately amplifying the infinitesimal output of a moving magnetic phono cartridge (with its varying impedance and capacitance), while matching the theoretical RIAA equalization curve built into every master disc, is the true determiner of a preamplifier's "sound."

We start with two separate extended-curve phono stages utilizing the quietest multiple emitter transistors in the world. The result is zero cartridge interaction. Zero normalized phase shift. Zero group delay. And noise performance within one dB of the theoretical limit of real-world cartridges.

No slew limiting. No overload. Unmeasurably low TIM distortion. In fact, its output can drive virtually any load. No matter how resistive; no matter how capacitive.

Many esoteric preamplifiers would stop here, making a name for themselves just on the elaborate technology we have incorporated into the C-1's phono stage, pre-preamplifier.

Next, we paid such close attention to following stages by designing out group and phase delay that the C-1 can drive real-world loads with an input to output null in excess of 86dB.

That means a watt of output signal tracks the input signal with such astonishing precision that just 0.000000251 of the output signal is imperfect, a level absurdly lower than the molecular level of your eardrum.

Included is a precision, infrasonic filter circuit to cut power robbing, destructive cone flutter caused by warped records, floor vibrations, direct drive turntable resonances and acoustic feedback from high listening levels. They result in visible cone flopping, waste of amplifier power, and obvious distortion.

Next we added a set of variable turnover tone equalization controls, allowing general room and speaker adjustment. By providing a way of varying the mid-point of both bass and treble controls, you can change the "shade" as well as the intensity of tone control. If you prefer you can switch out the EQ control section at any time for instant sound comparison.

A good preamplifier should also be the total nerve center of your stereo component system. So we were careful to include five important switching features besides source selection.

Not only can you operate two tape decks through the C-1, you can dub from one to the other without reconnection.

A special external processor loop allows you to add outboard devices without engaging a tape monitor circuit. A stereo/mono switch lets you check speaker and signal source phasing.

Finally, instead of simply providing a powered headphone outlet which cuts out speakers when you plug in, we designed a speaker defeat switch which lets you select speakers, headphones or both.

Put quite simply, the specifications, features and performance of the C-1 preamplifier up to this point should place it in the $1000 to $3000 price range.

The C-1 is your gateway to Sonic Holography.

While the best you can claim from good stereo is that it "images between the speakers," Sonic Holography expands that postcard of sound into a magnificent cycloramic mural.

Wider than your speakers. Higher than your speakers.

Extending around you, closer than, yet many feet deeper than your speakers. A true three-dimensional stage.

The difference between a porthole and picture window.

How does Sonic Holography work? Snap your finger a few feet from your right ear. That single "sonic event" resulted in two "sound arrivals." One to your right ear and one at your left ear. Now while ALL sound events in real life result in two sound arrivals, conventional stereo bombards the ear with FOUR sound arrivals: giving you a muddled and completely different set of cues than your ear-brain system has learned to process over a millenia of evolutionary adaptation.

Bob Carver's special circuitry analyzes these spurious signals and sends out another set which exactly cancel the second, confusing set. The result is your ears get just one pair of sound arrivals and think they're actually witnessing the sound event!

High Fidelity magazine said it "seems to open a curtain and reveal a deployment of musical forces extending behind, between and beyond the speakers."

Julian Hirsch of Hirsch-Houck Labs noted, "...the effect strains credibility."

All with two ordinary stereo speakers and the C-1's Sonic Hologram section.

Quite frankly, while Sonic Holography works with virtually any speaker system, it requires precise attention to initial speaker placement. This initial set-up is made easier by detailed, lucid instructions and rewards the listener with a quantum leap in sound reality, whether you fancy Lizst or Def Leppard.

No matter what your listening tastes, the C-1 represents the ultimate combination of sheer musicality and superb value in one fine electronic instrument.

Specifications C-1

Distortion: < .04% IM (CCIR or SMPTE); < .04% THD
S/N: 96dB, IHF A-weighted, below 2V RMS
a. Phono: M.M. 82dB IHF A-weighted below 5mV RMS
b. Phono: M.C. 86dB IHF A-weighted
Freq. Resp: 5Hz - 200kHz, +1 – 3dB
Equalization: ± 6dB @ 40Hz and 8kHz/ ± 6dB at 150Hz and 2kHz
Infrasonic Filter: 18dB/octave below 20Hz, f3 = 15Hz
Dimensions: 3.5"H, 19"W, 10"D, Weight 6 lbs.

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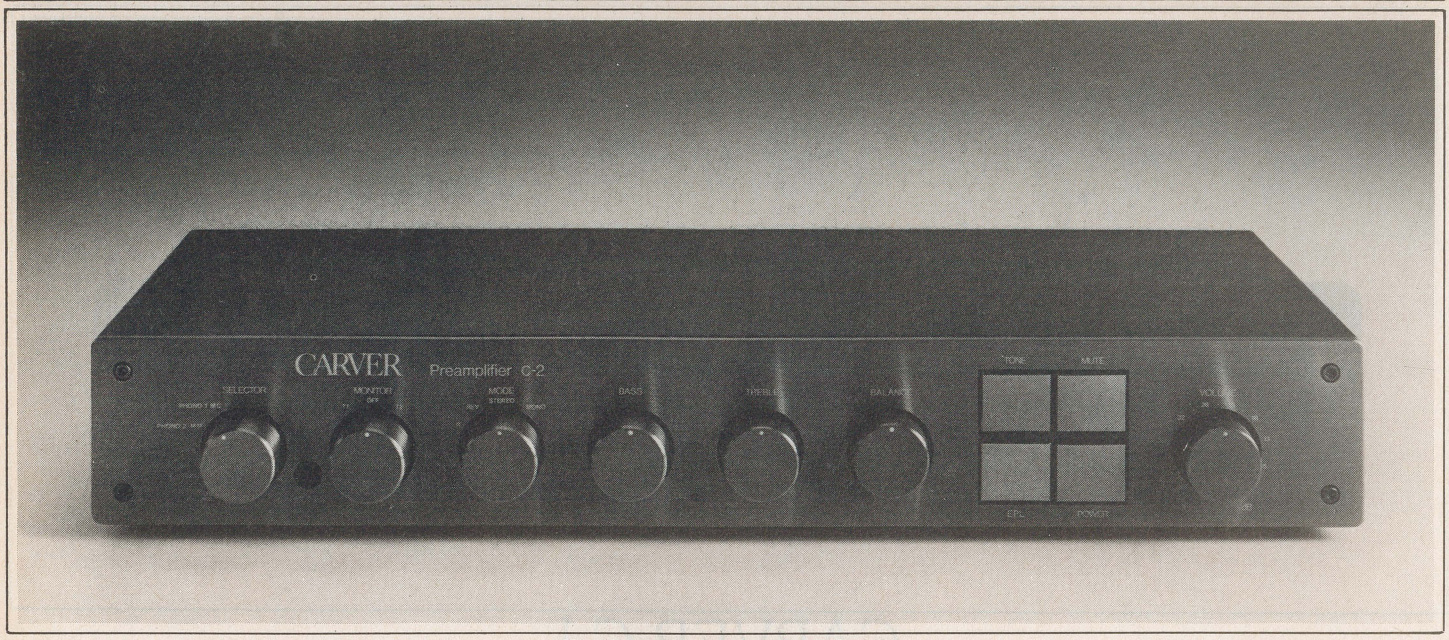
C A R V E R



CARVER C-2
STEREO PREAMPLIFIER

The C-2 preamplifier joins a tradition of excellence. Imagine a sound system in your home utilizing your favorite turntable with either a moving coil or moving magnet phono cartridge being taped by your cassette deck and reel to reel.

Now imagine taping from one tape deck to another with the ease of just one click. Then, when you wish to move on to new dimensions, switch to either your digital disc player, your tuner or an extra signal processor at will.

All this flexibility is offered by the C-2 with one overriding prime directive: To reproduce your music with absolute sonic purity. This is made possible with the use of the finest quality electronic components, mounted on the highest quality, glass-epoxy circuit boards. The end result is the virtual absence of distortion.

The CARVER C-2 preamplifier offers the discriminating audiophile with a relatively moderate budget the opportunity for uncompromised sound and handsome design.

Let's take a "guided" tour of the C-2's front panel and explore the advanced features this remarkable preamplifier can bring to your system.

The **Selector** switch controls the various signal sources which you may have in your system: turntables with moving magnet and/or moving coil phono cartridges, FM tuner and an auxiliary input that's perfect for the new generation of Compact Digital Disc players, laser video disc soundtracks or VCRs. You can even hook up the audio output of many computers such as the Commodore 64, Apple or PC sound cards.

The **Selector** switch also controls which signal is sent to your cassette and/or reel-to-reel decks. In conjunction with the next switch this allows not only taping any input source but transferring the signal (dubbing) between two tape recorders.

The tape **Monitor** switch is normally left off unless you want to listen to a tape or check out how well it's being recorded. When you wish to play a cassette or open reel tape, simply click the selector from Off to Tape source 1 or 2. Ergonomically, this is a far easier approach to signal selection than the traditional "Tape Monitor" and "Dubbing" buttons often stuck off to the side of the regular controls.

A special **Mode** switch allows listening in mono, stereo, reversed-phase stereo, left-only and right-only modes. This allows enjoyment of classic monophonic transcriptions and provides a quick way of checking speaker phasing and turntable/cartridge performance.

In between these two signal selection buttons is a **Headphone plug** which allows you to enjoy the new breed of high-performance individual listening devices. Unlike some preamplifiers, this is not an underpowered afterthought. The C-2 lets you add headphone extensions of up to fifty feet and even pair up two sets of headphones *without loss of volume or degradation of sound quality.*

The C-2's **Bass and Treble Tone Knobs** control equalization circuits which allow carefully-planned increases and decreases in the overall sound spectrum. They are designed to boost and cut at the outer edges of the bass and treble frequency range without major effect to the midrange areas.

After the self-explanatory *Balance* control are four switches controlling various important functions. If you are not in need of equalization, a corresponding switch is provided which totally disengages the circuitry for "flat" response.

An **External Processor Loop** switch lets you add and enjoy equalizers, expanders, special speaker EQ boxes, open-ended noise reduction units or our own C-9 Sonic Hologram Generator.

The Mute control lets you cut off sound output without changing the volume control during record changes, telephone calls or while listening to headphones only.

Additional specialized circuits are accessed from the back of the C-2 as well. An **Infrasonic Filter** circuit helps protect your speakers from power-robbing, ultra-low bass distortions caused by turntable resonance, warped records, acoustic feedback and other "real world" problems.

Next to the phone inputs are a second set of sockets which allow precise control of **Phono Cartridge Loading Impedances**. By adding or subtracting resistance values with special plugs, your cartridge and connecting cable can be balanced to sound their best without peakiness or hollowness caused by improper loading impedance.

Two **Line Gain Sockets** allow *a high-level gain* choice of 15 or 25 dB to ensure the best possible match with your power amplifier's input needs.

The preamplifier measures 17.3 inches wide, 9 inches deep, 2.55 inches high. Weight approximately 6.5 pounds.

Technical excellence aside, the true measure of the C-2 is its overall sonic accuracy: rich, musical, and totally uncompromised sound delivered in a truly affordable package.

Explore the promise and performance of the C-2 at your Carver dealer today.

Specifications C-2

Distortion: THD .05%; .05% IM (SMPTE); .05% IM (CCIR) 96db, IHF A-weighted re 2V
a. Phono: M.M. 83dB IHF A-weighted re 5mV @ 47k ohm
b. Phone: M.C. 77dB IHF A-weighted re 500 uV @ 47k ohm

Freq. Resp.: – 3dB @ 3Hz and 80kHz

Equalization: ± 7dB @ 100Hz/ ± 7dB @ 10kHz

Infrasonic Filter: 18dB/Octave below 20Hz, f3 = 15Hz

Input Impedance: 100k ohm parallel with 150 pf

Output Impedance: 600 ohm

Dimensions: 2.55"H, 17.3"W, 9"D, Weight 6.5 lbs.

Gain Increase: + 10dB boost, rear access

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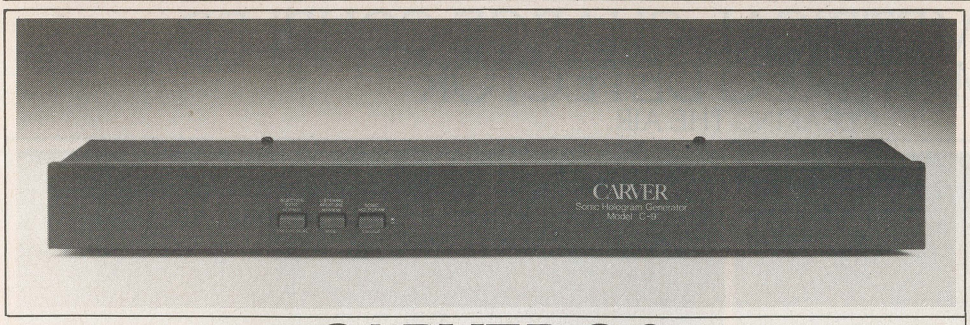


CARVER C-9
SONIC HOLOGRAM GENERATOR.

Now any hi-fi system, from the smallest receiver to the largest separate stack, can be used to expand your listening horizons with the magic of Sonic Holography.

We've extracted the complex Sonic Hologram circuitry found in our C-4000 and C-1 audiophile pre-amplifiers and placed it in a compact outboard unit.

It connects in minutes to any receiver, preamplifier or integrated amplifier which has a tape monitor loop or external processor circuit.

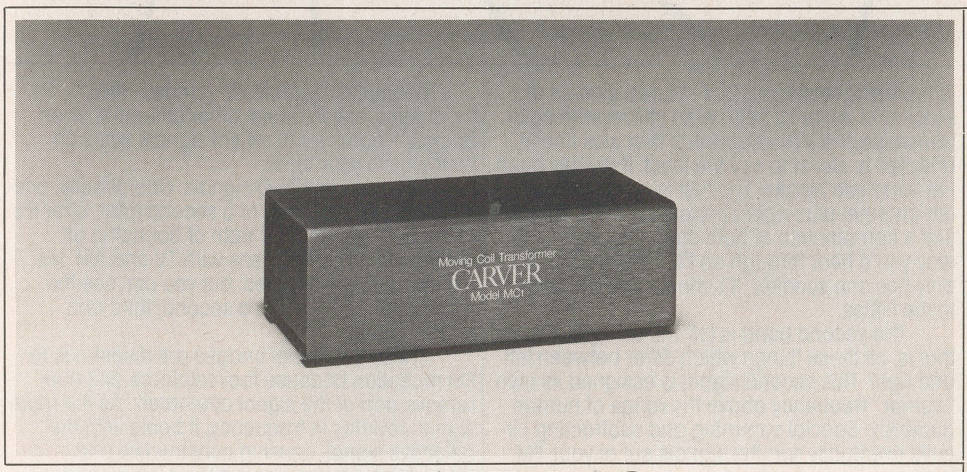
True realism with Sonic Holography. The illusion of stereo imaging is an acquired taste which audiophiles learn to be sensitive to—acclimating to its unnatural perspective in order to enjoy the portrait of sound which the stereo system paints upon the wall between the loudspeakers.

In reality, sound approaches you not just head on but from the sides and from behind. It reverberates through a room, giving you cues as to not only the position of the performers but your position as well. Incidentally, this sort of sonic information is not limited just to classical music recorded in a concert hall. Multi-track pop music also contains ambient and reverberant information. After all, a guitar amp, drum or saxophone are played and recorded in a three-dimensional space. It's just not very apparent listening to stereo.

Sonic Holography presents timing and phase information that now exists in your records, but has been inaudible with normal stereo components. With Sonic Holography, this information emerges in three-dimensional space around the listener. The precise location of instruments and voice can be pinpointed. You don't need a trained ear to notice the difference. Suddenly the listening field extends wider, higher and deeper than the speakers. You are literally immersed in the performance.

Specifications C-9

Rated Output: 2Vms
Maximum Output: 6Vms
Total Harmonic Distortion: less than 0.05% (20Hz to 20kHz)
IM Distortion: less than 0.05% (SMPTE)
TIM Distortion: less than .001%
Noise: less than 100μV, IHF A-weighted
Image Resolution: 5° horizontal, 20° vertical (in THEORETICAL mode)
Dimensions: 1¾" x 3⅞" x 17", Weight 3.5 lbs.



CARVER MCt
MIRROR-IMAGE GEOMETRY MOVING COIL TRANSFORMER

The Carver MC-t performs as well as esoteric transformers costing hundreds of dollars, making the potential of moving coil cartridges affordable for all music lovers.

Moving coil cartridges give the ear a feeling of fine-grained delicacy, of sheerness, transparency and effortlessness not found with even the best moving magnet cartridges. They have been likened to the differences between a fine silk scarf and a heavy woolen muffler, or a crisp champagne vs. a heavy-bodied vintage port.

Unlike bulky moving magnet cartridges, moving coil cartridges put the heavy magnets around a lightweight coil at the end of the cantilever, resulting in quicker response to the movement of the stylus. Unfortunately, far less energy is generated by waving a coil around in a magnetic field than by waving the magnets around a coil of wire. Some sort of pre-pre-amplifier is needed to get their output up to line level.

Some preamplifiers include electronic circuitry to perform the step-up to higher voltages. Unfortunately, even the finest active circuit cannot match a passive transformer for sheer quiet and ultimate signal to noise ratio. Because they are simply two interwoven coils of wire without any power source or other components, they are as noise-free as the metal they're composed of. A signal enters the smaller of the coils and creates a magnetic flux which is picked up by a larger coil and hence "amplified" to line voltage.

Until Bob Carver approached the problem, moving coil transformers cost as much as $500. Handmade and often composed of exotic metals, they provided performance for a price too dear for many consumers. Less expensive transformers often exhibited ringing, phase shift and low frequency distortion.

Here, as with many other "esoteric" areas of audio, Carver has combined quality and affordability in a single product.

Dual, mirror-image transformers share a shielded space. The heart(s) of the MC-t are two totally separate transformers. One for the right channel and one for the left, sharing a specially-designed geometric space which eliminates interaction. Each of the four coils is wound with the finest, low-oxygen wire in a proprietary configuration. Distortion and ringing are non-existent. Signals which enter and exit the MC-t differ only in their strength, not in their quality.

But we didn't stop with the coil configuration. A critical concern is shielding, since any sensitive coil of wire acts as a sophisticated antenna, collecting external signals ranging from radio transmissions and hair dryers to the very patch cords and speaker wire in your system!

To combat this interference, the MC-t is housed in a seamless, mu-metal case, which in turn is shielded by grain oriented silicon steel, based on designs used in high-performance defense and space guidance systems. The internal transformers operate in total isolation from the electronically-noisy outside world.

The MCt can be swtiched to perfectly match the desired impedance of any fine moving coil cartridge.

Massed instruments and voices resolve into individual yet interwoven points of sound. The intricacies of harmonics, overtones and ambiance spring sharply into focus. Harshness melts into musical piquancy. Storm clouds of muddy bass emerge as lofty peaks of tight, well-defined fundamentals. The very bouquet of a recording rises to fill your listening room.

Audition the remarkable MC-t at your Carver dealer soon and learn what moving coil technology can do for the sound of your favorite music.

Specifications

Dimensions: 6" wide, 2" high, 3" deep.
Weight: 1 lb. 11 oz.
Gain: 24 dB.
Signal-to-noise ratio: greater than 100 dB IHF A-weighted.
Impedance: 3.9 ohms, 39 ohms, 110 ohms.
Frequency response: – 3dB at 3Hz and 80 kHz

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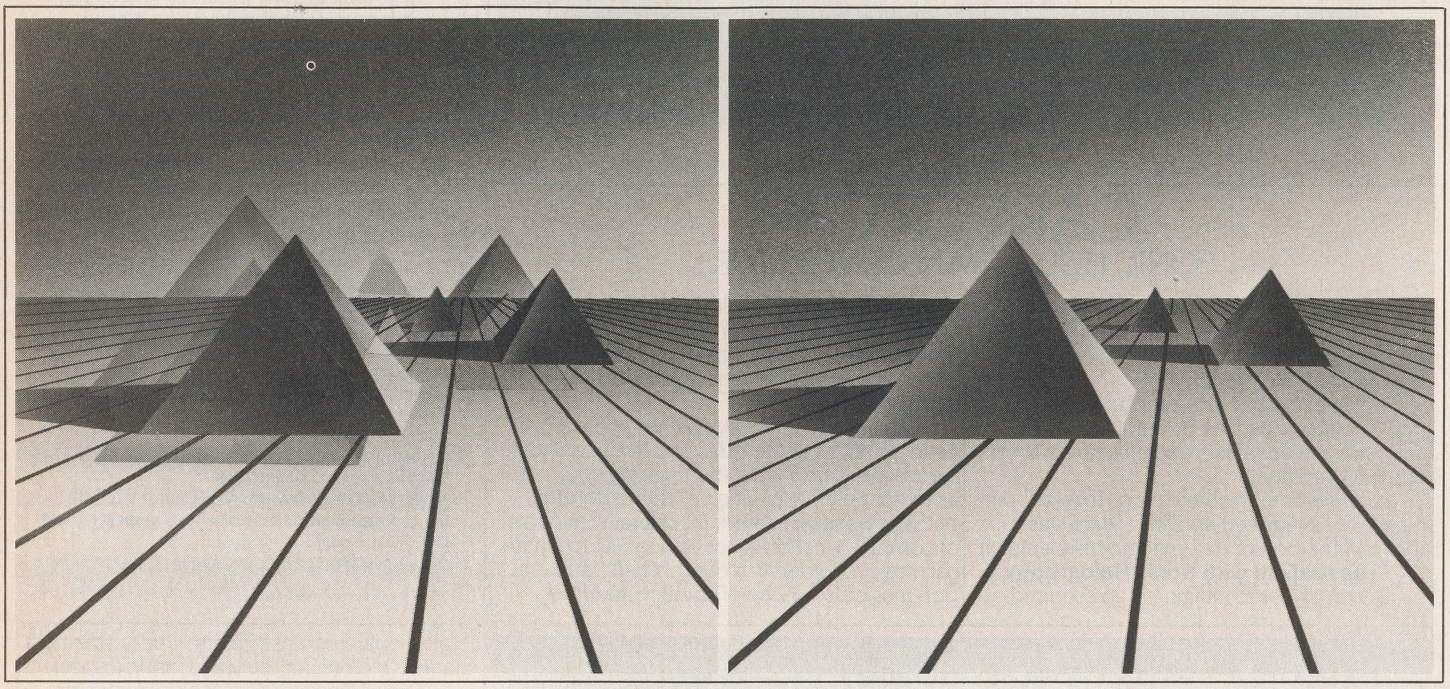
C A R V E R

THE ASYMMETRICAL CHARGE-COUPLED FM STEREO DETECTOR

CLEARING THE AIR.



The Asymmetrical Charge-Coupled FM Stereo Detector

Bob Carver's third major audio innovation has a very long name and a very simple purpose. To make FM sound as good as other stereo sound sources. Free of background hiss and annoying interference.

Unlike Sonic Holography and Magnetic Field Amplifier technology which solve problems that some of us have been unaware of, Bob Carver's third significant breakthrough solves problems you may hear every time you tune in an FM station. Non-musical sounds you've heard a thousand times. Annoying distortion that may have weighed against even spending the money for an FM tuner due to poor broadcast/reception sound quality.

FM was originally designed to broadcast rich, full-frequency mono. Frequency modulation transmitters were intended to broadcast better sound by varying frequency over a narrow, assigned band instead of changing the intensity of the signal (amplitude) the way AM did. A "carrier" frequency is modulated by music from 30Hz to 15kHz. And by other sources above that. (see sidebar) Back in the Fifties, the result was less noise, deeper lows and crisper highs. Voila! High fidelity broadcasting.

This system worked just fine—and still does if you have a mono FM receiver. However, stereo arrived in the Fifties and engineers set about finding some way to send TWO signals. They toyed with putting the left channel on FM and the right channel on AM, splitting left and right channels into two smaller bands within the assigned FM band and a number of other "discrete" approaches.

None of which impressed the FCC. "Whatever you come up with," they ruled, "has to be able to deliver the whole signal to all those folks with mono FM receivers. We're not going to allow instant obsolescence just because some audiophiles want this new-fangled stereo." (This is the same reasoning that insured owners of black and white TV sets could still receive color transmissions.) The approach that was finally adopted is clever to say the least. It divides each FM band into blocks. The first is composed of left-channel-plus-right-channel (L + R). This is just a combination of both channels, much the way you'd hear through an FM clock radio that only has one speaker. It's mono, just like back in the Fifties.

The second band is left-minus-right (L – R), that is, all those things which differ between left and right. This second signal is assigned its own "carrier" frequency above the range of human audibility. Special summing and subtracting circuits eventually sort the signals out at your FM tuner.

A brilliant solution... if you live within sight of the transmitter. Unfortunately, this important second signal (L–R) is extremely prone to mishaps between the transmitting tower and your FM tuner. These are usually induced by multipath reflections off hills, buildings and the ground, causing more than one L – R signal to arrive at your tuner to confuse things.

The effect is much like that of TV picture ghosting which increases with the number of skyscrapers and tall hills between you and the tower. In both cases, the main signal deviates in frequency, "beating" with the reflected signals (phase modulation), causing destructive interference patterns which bear no resemblance to the original signal. Even the most expensive FM tuners are tricked into reading this phase modulation as frequency modulation. In fact, the better the tuning circuit, the more easily it is deceived!

Audio Ghosting. To get stereo FM perfectly, you'd have to be the only house in the middle of a vast flat plain with no other buildings anywhere on the plain.

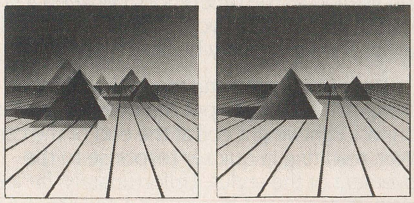
Because any protruding mass—hills, mountains, skyscrapers, other antennas, even bridges—looms up to reflect signals while on their way to your tuner.

Then you get TWO signals. One directly, and one or more a fraction of a second later, after it's taken a longer angular path of bouncing off something. (This happens with TV and AM, too. AM isn't audibly affected, but you can see the frustrating result on TV: a second, third and fourth image.)

These additional images are disastrous to FM reception because they reinforce and then remove part of the signal alternately. As the main signal deviates in frequency, it beats with the reflective signal, causing constructive and destructive interference patterns which bear no resemblance to the original signal. An engineer calls these "beats" *phase modulation.*

While stereo FM receivers have made much of cancelling one component of this interference, they have never addressed the truly audible distortion caused by phase modulation.

Without waxing too technical, suffice to say that your FM receiver is tricked into reading phase modulation as frequency modulation, which is decoded and made into a brand new signal. The better your current tuner, the more faithfully it's deceived!



Multipath is caused by multiple reflections of the L – R signal

Charge-coupling circuitry cancels all but the true L – R signal

Thus instead of just degrading the existing signal, multipath reception problems actually

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CAUSE NEW AUDIBLE SOUNDS. And we've all heard how bad these sounds sound.

How, then, can the Carver ACCD circuitry improve this theoretically unsolvable problem? The first portion of the design can be thought of as the "Search and Destroy" section. It takes advantage of the fact that almost all noise and distortion is in the L – R signal portion. And, for every instantaneous noise or distortion voltage on one channel, there is a replica in the opposite channel.

The Carver Charge-Coupled circuit detects these dirty, mirror images and cancels them before they can reach your ears. They are in effect, "played off against each other" before being compared and combined with the L + R signal and decoded into stereo.

The results are a dramatic reduction in hiss, clicks, pops, picket-fencing and the myriad indescribable, unpredictable noises which often disturb FM listening. But just cancelling out parts of a signal is not enough. If Carver ACCD circuitry merely eliminated objectionable portions of L – R, it could potentially suppress so much that no signal would exist at all. It would have thrown the baby (the stereo charactaristics) out with the dirty bathwater (the noise and multipath).

Luckily, 85% of the L – R signal duplicates the L + R signal, so quite a bit can be cancelled without losing imaging and ambience. The other 15% is totally different and represents the instantaneous phase relationships which produce stereo listening experiences. Rather than compromise and leave 15% of the signal at the mercy of topography, architecture and distant transmitters, Bob invented another circuit which could "treat" this last critical 15% of the L – R signal while maintaining its sonic integrity.

It's called the Leading Edge Detector.

Bob Carver performed extensive psycho-acoustic research to bring us Sonic Holography. During these experiments, he discovered that, if properly matrixed, only ⅓ of the remaining non-redundant 15% of the L – R signal is required to convince our senses of a fully separated stereo experience. That may sound complicated, but it just means that out of 100% of the fragile L – R signal, only 15% of it is different that the sturdy L + R signal. And out of that, only 5% is really telling our ear-brain center anything important about imaging, spacial relationships or ambiance.

The Leading Edge Detector circuit operates only on this final 5% of the L – R signal necessary for our ears and brain to construct true stereo localization. By processing this narrow segment and then carefully interleaving it into the FM tuner's receiver matrix, a net noise and distortion reduction of 93.5% (over 20dB) is achieved.

But for the vast majority of American FM listeners, multipath distortion from building, hills and even just plain flat ground are the cause of most listening woes. For them, ACCD circuitry can deliver a stereo signal as noise-free as mono.

When first introduced in our TX-11 tuner, reviewers substantiated Bob's theory with down-to-earth raves over the improvement in sound quality. For example, "Distinguished (by) its ability to pull clean, noise-free sound out of weak or multipath-ridden signals that would have you lunging for the mono switch on any other tuner we know of." *High Fidelity*

"Breakthrough in FM tuner performance. A tuner which long-suffering fringe area residents and those plagued by multipath distortion have probably been praying for.

"The significance of its design can only be fully appreciated by setting up the unit, tuning the weakest, most unacceptable stereo signals you can find, then pushing those two magic buttons. Separation was still there; only the background noise had been diminished, and with it, much of the sibilance and hissy edginess so characteristic of multipath interference." *Audio*

"... if you are way out in the suburbs or in a 'deep fringe' area, the Carver TX-11 tuner may well make a difference between marginal reception of the station signals you've been yearning to hear and truly noise-free reception of those same signals, permitting you to enjoy the music and forget about noise and distortion." *Ovation*

"The Carver TX-11 is one of the few important circuit developments in FM radio to come along in the past several years." *Audio*

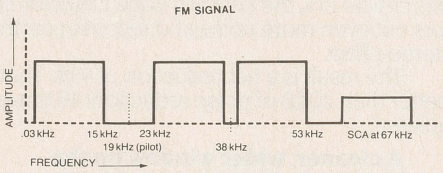
"Its noise reduction for stereo signals ranges from appreciable to tremendous. It makes the majority of stereo signals sound virtually as quiet as mono signals, yet it does not dilute the stereo effect." Julian Hirsch, *Stereo Review*

Now there are five ways to hear what they heard. Our Asymmetrical Charge-Coupled FM Detector circuit is available in the TX-2 Tuner, Carver Receiver, Receiver 2000 and Receiver 900 as well as the breakthrough TX-11 Tuner.

Visit your Carver dealer soon and tune into the only significant improvement in FM since the Fifties.

Tuning in on FM. How it works.

The FCC assigns FM channels ever 200 kHz across the FM dial at odd decimals, like 101.7 and 98.3. Each of these bands contains a number of different signal components.



One we don't have to be concerned with is a special subcarrier at 67kHz called the Subsidiary Communications Authorization (SCA) signal. It is leased by FM stations to background music companies. Special receivers decode it and fill your local elevator, department store or grocery market with audible anesthetic. More recently, the band has been used to transmit coded financial information, news and other text, as well as for special programming for the visually impaired and foreign language translations.

At the opposite end of the frequency modulation spectrum is the mono L + R signal. This is the cornerstone of FM: the summed signal. You need to receive nothing else to get a nice, wide-frequency mono sound.

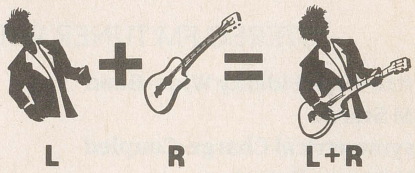
But in order to receive stereo, a lot more has to happen. A **difference** signal also has to be generated. This L – R signal is encoded into a subcarrier at 38kHz, two and a half octaves above the upper range of human hearing. In the encoding process, this subcarrier is cancelled out leaving two sidebands. Each is 15kHz wide and also well above the range of human hearing.

Now, you'll also note a "pilot" signal at 19kHz. What's THAT for? If the two L – R sidebands are broadcasted with the 38kHz subcarrier, audible interference is caused. Yet it has to be there in some form. So the encoder first makes a "copy" of it at half the frequency (19kHz) and then eliminates it from the signal. At the receiver, the 19kHz signal is doubled back to 38kHz and used to decode the L – R signal. Note that this whole nifty plan goes awry when we get to the 19kHz pilot signal which IS audible without special signal processing.

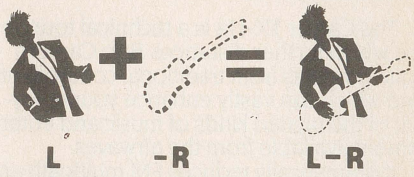
At the receiver the signal is added and subtracted to produce two different channels.

A good way to think of this whole L – R/L + R process is to consider a stereo transmission with a guitar on one channel and a singer on the other.

When the signals are added together, you get L + R, both singer and guitar together.

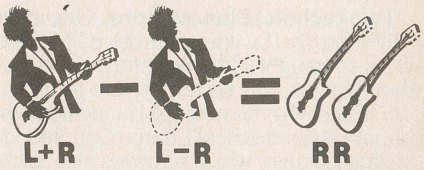


Now one signal is combined with a "negative" version of the other signal, resulting in L – R, or those components found in one channel but not the other.

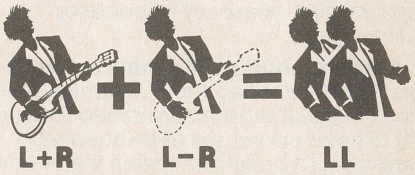


Your FM receiver gets both of these signals, one at 30 Hz to 15kHz and the other in the two sidebands up at 23-38kHz and 38-53kHz. After decoding them, they are processed two different ways.

L + R and L – R are subtracted from each other to get just the channel with the guitar.



And the signals are combined which cancels out the guitar, leaving just the channel with the vocalist.



Mathematically, it's represented as:

(L + R) + (L – R) = L + R + L – R = 2xL

(L + R) – (L – R) = L + R – L + R = 2XR

Of course the L and R sources are much more complicated than that since single instruments aren't on single channels. But in general you can begin to understand just how "jury-rigged" the whole FM broadcasting process is, just how complicated the decoding process within an FM receiver is . . . and just how remarkable it is that we can get stereo at all, much less at anything approaching hi-fi quality.

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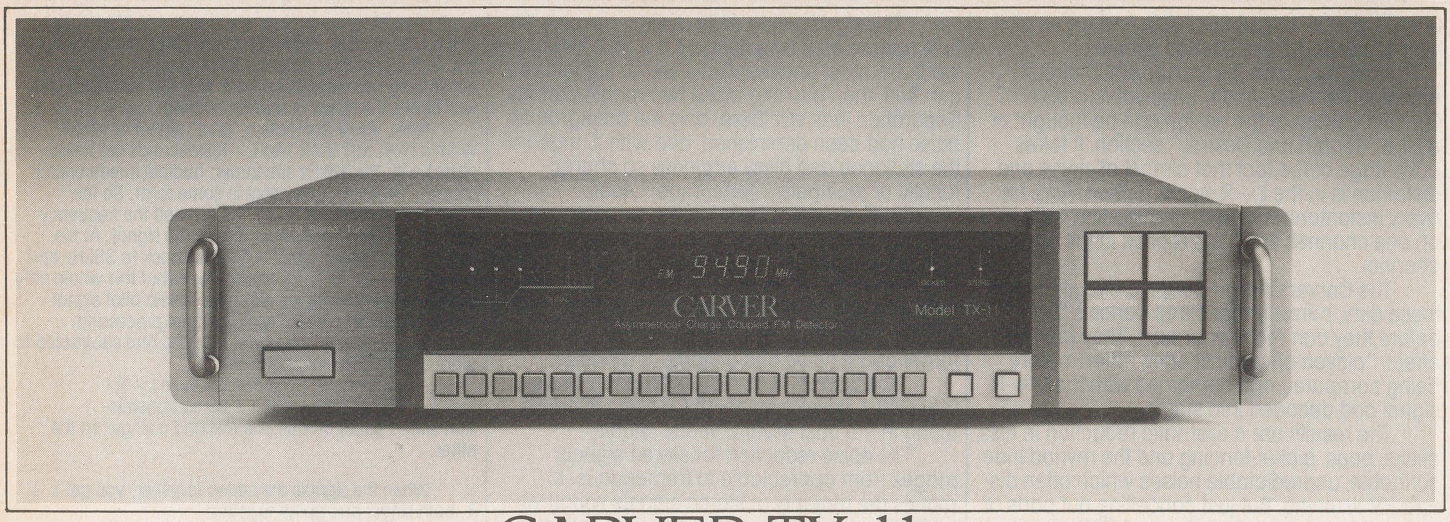
C A R V E R



CARVER TX-11a

STEREO FM TUNER WITH ASYMMETRICAL CHARGE-COUPLED FM STEREO DETECTOR.

- **Ultra-High Fidelity Wide-Band AM Stereo**
- **Asymmetrical Charge-Coupled FM Stereo Detector**
- **13 Random AM/FM Station Presets**
- **Multipath Elimination Circuitry**
- **Noise Reduction**

The Carver TX-11a is a technical tour de force which further distances Bob Carver's unique products from traditional components—and which can vastly enhance your enjoyment of the myriad kinds of music and entertainment available from the airwaves.

It dramatically reduces FM multipath and distant station noise while providing stereo reception with space, depth, ambiance, and full separation. The TX-11a also opens up whole new sonic possibilities through the incorporation of the world's finest AM stereo reception section. AM signals sound as good as FM!

Two technical innovations. One inventor. With the TX-11a, you *can* receive FM stereo stations so fraught with interference and distortion that you may be tempted to return to mono. That's why the new TX-11a includes the legendary Asymmetrical Charge Coupled FM Detection Circuitry which removes hiss, "picket fencing" and multipath interference, and the many other unpredictable noises which often disturb FM listening. Without reducing stereo imaging, frequency response or dynamic range.

Understanding FM's inherent problems. Thirty years ago, the FCC turned clear mono FM into a substandard stereo medium (with 15 times poorer signal-to-noise ratio), by approving a broadcast system that is extraordinarily prone to multipath and distant station noise.

This system separates stereo into two different bands. But not just Left and Right, like a cassette. Instead, one band is comprised of those parts of a stereo signal which are common to both channels (L+R, or mono); the other, those fragile differences between Left and Right (L-R).

When the (L-R) signal careens off buildings, hills, bridges and even large trucks, an extra signal arrives at your antenna, rather like audio "ghosting." The result is not only scratchy reception, but rhythmic pulsing of the sound (called "beating"), plus a whole repertoire of rude sounds, as conventional tuner/receiver circuitry vainly tries to sort out the signals.

Not even the most expensive traditional tuner circuitry can conquer these problems. Because none of them approach a solution the way Bob Carver did.

The silent treatment. The TX-11a starts with an incredibly precise quartz synthesis circuit which generates an exact replica of the desired FM frequency and then matches it to the incoming signal for perfect, drift-free reception. Then the real magic begins.

Almost all noise and distortion is exactly 180 degrees out of phase with itself. In other words, for every instantaneous noise voltage, there is a replica in the opposite channel. The TX-11a's Charge-Coupled circuit detects the tell-tale, dirty mirror images and cancels up to 85% of them before they reach your ears.

We weren't satisfied with merely 85% and knew that you wouldn't be either. Another Carver development, the Leading Edge Detector, goes a step further by taking advantage of the L-R signal's remaining 15%. Operating on this critical 15%, the Leading Edge Detector filters out even more noise and reconstructs the stereo effect.

The result is a net reduction of 93%. That's better than 20dB of noise reduction! 10 times quieter!

A cleaner, wider window on the world. Owning the TX-11a may actually change your listening habits. Instead of being confined to strong, relatively interference-free stations, your choices are vastly expanded to stations previously buried in hiss or prone to sudden tantrums of noise.

Len Feldman in *Ovation Magazine* observed that the circuit, "...may well mean the difference between marginal reception of the station signals you've been yearning to hear and truly noise-free reception of those same signals."

Audio Magazine called it, "An FM tuner breakthrough."

The first audiophile AM stereo circuitry. Contrary to popular belief, most AM stereo stations have frequency response (20-15kHz), separation (35dB) and signal-to-noise ratios (70db) *audibly indistinguishable* from FM stations of equal strength.

Unfortunately, the AM sections in even many deluxe tuners have been given short shrift. They sound terrible because they are limited to frequencies scarcely higher than 3kHz, signal-to-noise ratios of only 30dB, and distortion as high as three to eight percent.

Only Carver offers the quality technology to fully take advantage of AM stereo's hidden performance. The innovations include a unique de-emphasis circuit, pilot signal and whistle-stop cancelling circuits, an ultra-low noise balanced station detector, and very wide band, minimum-phase intermediate frequency amplifiers. What all this means to you is simply true high fidelity AM Stereo sound.

At a major press conference, Bob Carver unveiled this remarkable new design. To dramatically demonstrate the TX-11a's AM stereo fidelity, he also unveiled an AM stereo broadcast source. This same CD player was also routed directly so comparison could be made between the direct signal from the CD player and the same signal being received by the TX-11a.

In front of America's most respected audio critics, Bob switched back and forth between the transmitted signal and the direct signal. Many listeners had difficulty distinguishing between the two. *Most could tell no difference at all.*

If the TX-11a can receive AM that well, think of how well it will receive your favorite FM stations.

Human-engineered features and convenience. Many tuners with far less exclusive circuitry have far more complicated exteriors than the Carver TX-11a. Instead of impressing you with flashing lights and keypads, Bob Carver simply wanted to make it easy for you to tune stations.

Engage the Auto Tune control, by touching the UP or DOWN button and let the TX-11a find each and every receivable station while displaying the signal strength of each with six pinpoint LEDs. Or manually advance across the AM or FM band with total precision.

When you find a station you want to regularly listen to, touch MEMORY. It then enters

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one of 13 presets that allow you to select any combination of AM and FM signals. Select them in any order "on the dial," and then recall them instantly. (If you don't presently have 13 favorite stations, just wait until you discover how many more previously poor signals suddenly come in clear and hiss-free with a TX-11a). And remember, the TX-11a will remember all 13 presets even when unplugged for up to three weeks. In fact, it even returns you to the last station you were listening to each time you turn it on.

Controls for the serious listener. Carver's Asymmetrical Charge-Coupled FM Stereo Detection circuitry, two handy AM signal circuits and Wide/Narrow band selection are all switchable for the precise control that audiophiles and recordists often demand.

A Narrow Band FM setting eliminates bleed-through when strong stations are extremely close on the dial without losing frequency response. Wide Band can be used when such interference is not a problem to receive slightly greater dynamic range.

While in AM mode, the ACCFM Detector controls double as a +12dB RF Gain Switch, which increases sensitivity of weak or distant AM stations, and a Noise Switch to eliminate periodic interference caused by fluorescent lights, thermostats, dimmers, etc.

Clear the air by visiting your nearest Carver Dealer. Ask to hear the most famous, expensive and/or esoteric tuner they sell. (It won't be the Carver TX-11a). Tune a multipath-ravaged, hiss-filled FM station on it. Excruciating. Then the same station on the TX-11a Stereo AM-FM Tuner. Not much better. NOW press the Carver Multipath and Noise Reduction buttons. Ahhh. You'll hear why *High Fidelity Magazine* called it, "By far the best tuner we have tested."

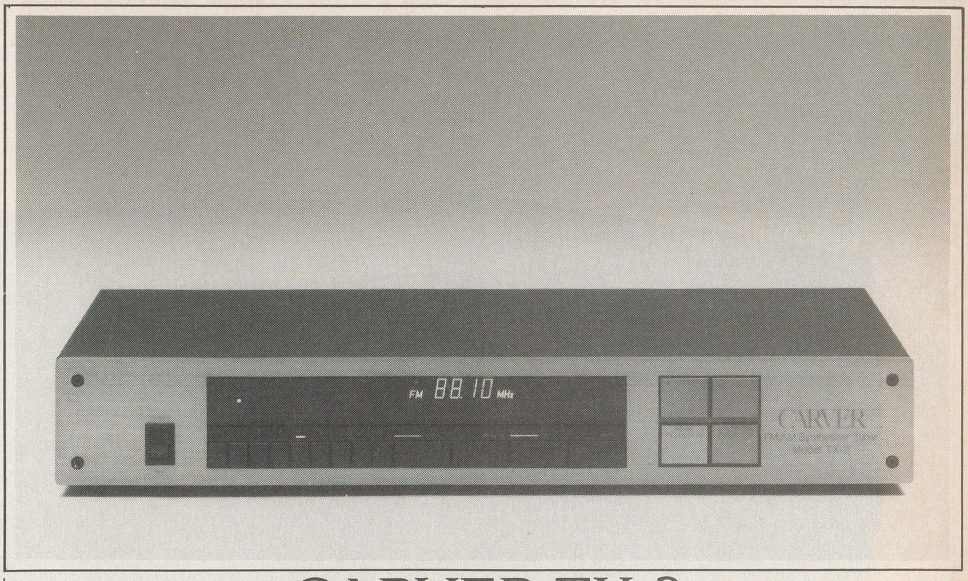
Specifications

FM

IHF Sens: 1.0μV
50dB Quiet in Stereo: 3.57μV
Distortion: 0.05% THD
S/N: 82dB
Freq. Resp.: 20Hz to 15kHz ±1dB
Stereo Separation: 45dB
Capture Ratio: 1.0dB
Noise Reduction: Up to 23dB
Multipath Reduction: Up to 14dB

AM

Sensitivity: 20μV
Image Rejection: 45dB
AM Stereo Separation: 40dB
AGC Figure of Merit: 90dB
Frequency Response: 20Hz to 15kHz ±1dB
S/N: 75dB
Dimensions: 3.5"H, 12.5"W, 12.5"D
Weight: 11.25 lbs.



CARVER TX-2

AM/FM STEREO TUNER WITH ASYMMETRICAL CHARGE-COUPLED FM STEREO DETECTOR

If you're tired of having to treat AM and FM as mere background music due to the quality of the signal, you should seriously consider the Carver TX-2. The TX-2's Asymmetrical Charge-Coupled FM circuit makes stereo FM the sonic equal of phonograph records and good cassettes.

Even if the TX-2 *didn't* have this special circuit, it would be the rival of any tuner you find on the market today. Sleekly styled and ergonomically designed, it has the features which make tuning, holding and adjusting stations as easy as touching a single button.

Not a single knob interrupts the front of the TX-2, for all controls are activated by large, inlaid pressure pads. Touch the power switch and watch the tuning panel come alive. You'll see a crisp, easy-to-read digital tuning read-out.

Automatic scanning and 16-preset memory. Press AUTO, then touch the UP or DOWN button and watch the TX-2 search the dial for strong stations. The LOCKED light will indicate perfect tuning. If it's one of your favorites, just enter it on one of the eight pre-sets pushbuttons. The LED above the button will light, so you can remember its position. Continue until you've picked eight FM stations.

That's probably more than you listen to right now. Because you probably can't GET eight perfect FM signals right now. With the TX-2, you probably can. That under-powered but well-programmed college station. The FM station behind the hill you could never tune just right . . . they're all waiting to become presets on the TX-2.

Manual tuning and superb AM, too. The Asymmetrical Charge-Coupled circuit does more than just clear away the hash caused by multipath distortion. It also lets you tune distant stations using the MANUAL control. Find a fascinating but faint signal buried in the background hiss? The TX-2's circuitry goes to work. Like a curtain rising, the annoying hiss falls way, leaving a clear signal, as accurate and well-modulated as stronger, local stations.

How about AM? You probably don't listen because the quality has been so low. You'll be surprised just how good many stations sound when received through the TX-2. That's why we give you eight AM presets!

Most tuners and receivers treat AM like a poor afterthought with only token investment made in circuitry. The TX-2 uses components and design as good as those in its FM section, cutting distortion to below 1% for a crystal-clear signal.

Everything you need to make broadcast part of your listening experience. From the six-stage signal strength indicator to 75 and 300-ohm inputs, the TX-2 gives you everything you need to clean up AM and FM stations' acts. We even provide an easy-to-read manual written like a textbook on how to get the best reception through antenna selection and placement.

Whether you live in a rural area where the FM signals you really like have been too far away or in a crowded urban sculpture of skyscrapers, highrises and factories which deflect FM like mirrors, the TX-2 represents an opportunity to enlarge your listening horizons.

The TX-2 has also been designed to function as a superb companion to the Carver C-2 preamplifier and the Carver M-200t Magnetic Field Power Amplifier.

Visit your nearest Carver dealer for a personal audition of the Carver TX-2.

Specifications TX-2

FM TUNER:

IHF Sens: 1.8uV
50dB Quiet Sens in Stereo: 5.0uV
Distortion: .2% THD
S/N: 74dB
Freq. Resp: 20Hz to 15kHz + .5dB
Stereo Separation: 42dB
Alt. Channel Select: 58dB
Capture Ratio: 1.0dB
Noise Reduction: up to 23dB
Multipath Reduction: 13dB

Dimensions: 2.55"H, 17.3"W, 9"D, Weight 9 lbs.

AM TUNER:

IHF Sens: 20uV
S/N: 55dB
Distortion: 0.9%
Selectivity: 42dB
Image Rejection: 45dB
I.F. Rejection: 34dB
AGC Figure Merit: 50dB

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C A R V E R

THE CARVER RECEIVER 2000.

Magnetic Field Amplifier technology. Sonic Holography. Asymmetrical Charge-Coupled FM Detector technology.

Three major Carver technologies in one exquisitely full-featured, remote-control receiver.

Everything necessary for music enjoyment. Settle back in your chair and pick up the Carver Receiver 2000's infrared remote control.

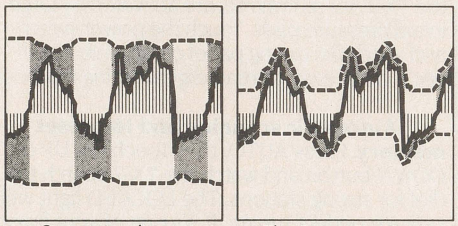
Press the POWER button. Two hundred watts RMS per channel comes alive. Enough to give Compact Discs the impact and clarity they deserve. As the music comes to life, you realize it would be a superb candidate for Sonic Holography. Another touch of the remote control and you're suddenly at the performance, a part of the musical experience. Later on, you select one of your favorite FM stations from the six presets. And then switch to AM stereo for a ball game. All from the comfort of your chair.

The Carver Receiver 2000 has inputs for phono, compact disc player and even video sound sources. It allows 2-1 and 1-2 dubbing through dual tape deck inputs and outputs and selection of two sets of speakers or a combination.

Defeatable tone controls are provided for bass, midrange and treble as well as a preset "loudness" equalization curve for accentuation during low level listening.

The bright digital readout and signal strength LED's are only a hint of the high quality quartz synthesized FM section and AM STEREO circuitry within. Choose from six FM and six AM station presets, tune manually or use the Receiver 2000's automatic station search feature.

From the silky feel of the large, easy-to-use knobs, to the unswitched power sockets on the Receiver 2000's back, you'll find that no detail has been overlooked. Even if it didn't have three of Bob Carver's major innovations tucked inside it, the Receiver 2000 would be one of the finest receivers you could own.



Conventional power amplifier.

The Carver Receiver's Magnetic Field Amplifier.

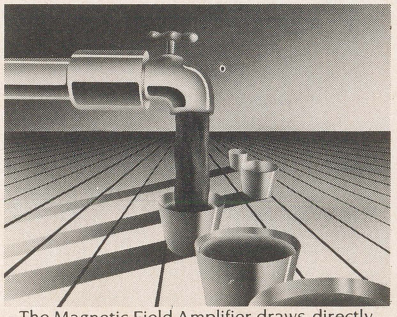
Solid line: audio output signal. Broken line: power supply voltage. Shaded area: wasted power. Vertical lines: power to speakers.

Ample Power for Digital. Even before Compact Disc players, clipping distortion has been the critical listener's enemy. Speakers need electricity to move air. They use it to generate magnetic fields inside the voice coils of their drivers. As the coils are repelled by fixed magnets within the speaker, they move outward, pushing the speaker cone with them. It, in turn, transfers that movement to the air in your listening room. A drum beat sounds on the record; energy flows to your speakers; the speakers push the air in some semblance of the original drum beat's impact.

The plain fact is, few receivers have the technical capabilities to provide enough power. They can translate say, 90% of a musical waveform into the power your speakers need. But just can't deliver that last 10%. Check out the graph in the Magnetic Field Amplifier section of this brochure. You'll notice the top of the impulse has been clipped off. That's where the phrase clipping comes from.

Even though most clipping happens as the receiver is trying to complete a bass waveform, audible distortion is generated in the treble range. Called clipping distortion, these impulses are spikes of non-musical, high frequency power caused as the amplifier hits the bottom of its power reserves. At moderate levels, these spikes veil music with a thin film of distortion that occurs with every musical impulse.

Conventional amplifiers must store massive amounts of power in reserve.



The Magnetic Field Amplifier draws directly from the source, eliminating bulky power supplies.

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Before Bob Carver, the only way to get enough power to completely eliminate clipping distortion was to buy a traditional, brute-force power amplifier design or one of the very few adequately powerful receivers. They are very costly and inefficient because they produce a constant high-voltage level at all times-irrespective of the demands of the everchanging audio signal. Even when there is no signal to amplify, conventional designs are drawing half power from your electrical outlet and converting it to heat!

The Carver Receiver 2000 uses a better way. A method of delivering the power speakers need without heat, bulk and distortion. The solution is elegant and effective.

Imagine a lightning-fast valve on your incoming power outlet. When power is needed, the valve senses the demand and opens, actually using the power of the actual power generator to deliver the needed current and voltage.

Note that this approach provides VAST POWER WHEN NEEDED during peak demands ... without keeping excess around during lulls. The "valve" we've described is the Magnetic Field Coil inside the Carver Receiver 2000. By delivering power only when needed, it can satisfy your speakers' need for power while generating less heat and virtually no distortion.

The finest receiver FM section ever offered. The Carver Receiver 2000 employs Asymmetrical Charge-Coupled Detector technology which makes FM sound as good as other stereo sound sources. Free of background hiss and annoying interference. Even on stations which were previously too weak to enjoy.

FM was designed to be mono, that is, Left plus Right Channel added together (L + R). Later on, when stereo became the rage, an additional signal was added, L – R, which carries stereo and ambiant information and is decoded by your FM receiver.

Unfortunately, this important second signal (L – R) is extremely prone to mishaps between the transmitting tower and your FM tuner. These are usually induced by multipath reflections off hills, buildings and the ground, causing more than one L – R signal to arrive at your tuner to confuse things.

The effect is much like that of TV picture ghosting which increases with the number of skyscrapers, and tall hills between you and the tower. Even the most expensive FM tuners are tricked into reading this phase modulation as frequency modulation. In fact, the better the tuning circuit, the more easily it is deceived! The Receiver 2000 can cut through this frustrating problem, though.

It takes advantage of the fact that almost all noise and distortion is in the L – R signal portion. And, for every instantaneous noise or distortion voltage on one channel, there is a replica in the opposite channel.

The Carver Charge-Coupled circuit detects these dirty, mirror images and cancels them before they can reach your ears. They are in effect, "played off against each other" before being compared and combined with the L + R signal and decoded into stereo.

The results are a dramatic reduction in hiss, clicks, pops, picket-fencing and the myriad indescribable, unpredictable noises which often disturb FM listening.

The effect is astonishing. As it was described in a leading audio magazine, "The significance of (this) design can only be fully appreciated by setting up the unit, tuning the weakest, most unacceptable stereo signals you can find, then pushing those two magic buttons. Separation was still there; only the background noise had been diminished, and with it, much of the sibilance and hissy edginess so characteristic of multipath interference."

True realism with Sonic Holography. The illusion of stereo imaging is an acquired taste which audiophiles learn to be sensitive to—acclimating to its unnatural perspective in order to enjoy the portrait of sound which the stereo system paints upon the wall between the loudspeakers.

In reality, sound approaches you not just head on but from the sides and from behind. It reverberates through a room, giving you cues as to not only the position of the performers but your position as well. Incidently, this sort of sonic information is not limited just to classical music recorded in a concert hall. Multi-track pop music also contains ambient and reverberant information. After all, a guitar amp, drum or saxophone are played and recorded in a three-dimensional space. It's just not very apparent listening to stereo.

Sonic Holography presents timing and phase information that now exists in your records, but has been inaudible with normal stereo components. With Sonic Holography, this information emerges in three-dimensional space around the listener. The precise location of instruments and voice can be pinpointed. You don't need a trained ear to notice the difference. Suddenly the listening field extends wider, higher and deeper than the speakers. You are literally immersed in the performance. But don't take our word for it. Begin by reading what major audio magazines had to say about Sonic Holography.

As one reviewer put it, "The effect strains credibility ... the miracle is that it uses only the two normal front speakers."

The best of everything in one compact component. There has never been a more complete method of enjoying music than the Carver Receiver 2000. With the power, the tuning ability and the miracle of Sonic Holography this is by far the most capable receiver ever offered. From its remote control to the wealth of tone and switching features, the 2000 lacks only speakers and your choice of sound sources to propel you into the fantastic world of sonic reality.

Specifications The Receiver 2000

POWER AMP:

Power: 200 W/channel into 8 ohms, with no more than .15% THD
Slew Factor: >100
Frequency Bandwidth: 1Hz to 30kHz ± .1dB

Protection:
Short Circuit
DC Offset
Low/High Frequency Trip

FM TUNER:

IHF Sens: 1.8uV
50dB Quieting Sens in Stereo: 4.5uV
S/N: 78dB
Distortion: .1%
Freq. Resp: 20Hz to 15kHz ± 1dB.
Stereo Separation: 45dB
Capture Ratio: 1.5dB
Noise Reduction: 7dB
Multipath Reduction: 13dB

AM TUNER:

Sens: 20uV
S/N: 55dB
Distortion: .6%
Selectivity: 42dB

PREAMP:

Distortion: .05%
S/N: 90dB
Freq. Resp: 20Hz to 20kHz + 0.5dB
Phono S/N (MM): 85dB
Phono S/N (MC): 76dB
Phono Input Impedance: 47K ohm

Dimensions: 5.5"H, 19"W, 17.9"D, Weight 33 lbs.

	MONO	STEREO W/O CHARGE-COUPLED DETECTOR	STEREO WITH CHARGE-COUPLED DETECTOR
USABLE SENSITIVITY	75 ohms, 11.3 dBf/1.0 μV 300 ohms, 11.3 dBf/2.0 μV	34 dBf/14 μV 34 dBf/28 μV	16.3 dBf/1.78 μV 16.3 dBf/3.57 μV
50 DB QUIETING SENS.	75 ohms, 16.1 dBf/1.7 μV 300 ohms, 16.1 dBf/3.4 μV	37 dBf/19 μV 37 dBf/39 μV	23.5 dBf/4.0 μV 23.5 dBf/8.0 μV
SIGNAL/ NOISE RATIO	75 ohms, 82 dB @ 85 dBf 300 ohms, 82 dB @ 85 dBf	74 dB @ 85 dBf 74 dB @ 85 dBf	85 dB @ 85 dBf 85 dB @ 85 dBf
STEREO SEPARATION (WIDE)		1 kHz: 45 dB 100 Hz: 36 dB 10 kHz: 36 dB	45 dB 30 dB 25 dB

ALL SPECIFICATIONS OR FUNCTIONS SUBJECT TO CHANGE WITHOUT NOTICE.

C A R V E R

THE CARVER RECEIVER

WITH ASYMMETRICAL CHARGE-COUPLED FM STEREO DETECTOR

Meet the original Carver Receiver, the one that has stunned critics and audiophiles with its combination of power, features and finesse.

To give you the RMS watts you need for today's recording advances plus virtually noise-free stereo FM reception. Carver has designed a receiver with astonishing performance. An instrument designed to make the most of innovations such as stereo/hi-fi video and digital audio discs. An extraordinary synergy of circuitry incorporating two of the high fidelity art's most advanced technological breakthroughs: Bob Carver's Magnetic Field Power Amplifier and his Asymmetrical Charge Coupled FM Detector.

With the Carver Receiver you command 150 watts per channel and a fully digital quartz synthesized AM-FM stereo tuner through a highly sophisticated and meticulously engineered pre-amplifier section.

At your fingertips, the comprehensive control of your entire system. On the front panel: control for turntable, video/audio disc player selection, an auxiliary input selector, and two tape input selectors.

Not only can you individually control bass, treble and midrange tone, but the loudness contour as well. And all tone controls can be taken totally out of the preamplifier circuit for "flat" response.

Choose from two sets of speaker outputs, a combination of both or eliminate them entirely for headphone listening through the Carver Receiver's special headphone amplification circuitry.

Monitor and dub between two sets of tape decks. Match the meter output range to your listening levels. Even switch to mono to detect speaker and cartridge phasing problems instantly.

Pick up to six FM and six AM stations at the touch of a button without having to tune all over the dial. Even activate a special AM filter circuit to cut hiss and sharpness. All in a compact unit no larger than any other conventional receiver lacking the innovations and human engineering Carver has become famous for.

Consider, there are very few 150 watt-per-channel receivers on the market today. Frankly, no other company has discovered how to make adequate amplifier power as affordable, light, compact and cool to operate as Carver. Their loss is your gain.

Only the Carver Receiver can surmount the inherent problems of sound reproduction which plague lesser powered receivers at all listening levels.

You see, even at modest listening levels your speakers are making peak power demands which cannot be fulfilled with your existing amplifier. Lightning-fast transients, combinant crests of demand created by multiple waveforms and high intensity-peaks.

Conventional, weaker receivers never deliver enough power, and somewhere, just before each sound pulse is finally formed, it gives out and sends a sort of electronic "note of regret," called clipping. This sharp high-end distortion veils the sound terribly, undoing all the accuracy of recording, cartridge and electronics as well as speakers.

At moderate listening levels, you may not have noticed it. Yet when you sonically compare the Carver Receiver to any other receiver in straight A/B comparisons, you'll INSTANTLY notice the improvement which adequate power makes.

Because it's patented Magnetic Field Amplifier and ultrasophisticated speaker protection circuitry delivers 150 watts per channel of pure, clean power. So you can truly appreciate your favorite music.

Unlike conventional amplifiers which produce a constant high voltage level at all times, irrespective of the demands of the ever-changing audio signal and indeed even when there is no audio signal in the circuit at all, the Magnetic Field Amplifier's power supply is signal responsive and highly efficient. It produces exactly and only the power needed to carry the signal with complete accuracy and fidelity.

At all times the Carver Receiver monitors your speakers for conditions that could cause damage, allowing them to cool off long before they reach a state which could be damaging. The same circuits also guard against surges caused by shorts and accidental dropping of the tonearm on a record when the volume is turned up.

These built-in precautions afford you new listening freedom because you don't have to be afraid to unchain the power of the Carver Receiver. Whether you're spinning your original copy of Dark Side of the Moon or a state-of-the-art Compact Digital Disc of the 1812 Overture, you can play it at the volume you want without compromising sound quality or your speakers.

The resulting spaciousness, sonic impact and sheer musicality will invigorate your existing speaker's system, your own ears and those of your friends.

The Carver Receiver also gives you FM stereo performance unmatched by that of any other receiver. As it is transmitted from the station the stereo FM signal is extremely vulnerable to distortion, noise, hiss and multipath interference. In fact, because of the transmission system in use today, the signal to noise ratio of FM stereo has been degraded fifteen times (more than 23 dB!).

However, when you engage Carver's Asymmetrical Charge Coupled FM Detector circuit, the stereo signal arrives at your ears virtually noise-free. The result is fully separated

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stereo with space, depth and ambience!

You'll suddenly pull in stations in surprisingly distant cities and suburbs. Underpowered but interestingly programmed college FM stations will be noise and distortion-free. Stations previously overpowered by strong adjacent signals will sound as steady as if they were alone on the dial. Stations which threw intermittent tantrums of intolerable racket will be pacified. The special circuitry can't make weak stations louder—you'll have to do that with your volume control—but when you crank up a feeble station it will not be submerged in a sea of hiss and multipath.

You will also appreciate the AM section. Meticulous attention to a very aspect of tuner performance gives you an AM section with true high fidelity response. You will not find another receiver with such high performance anywhere.

The Carver Receiver has been designed for serious music listeners who seek fidelity, accuracy and musicality.

We know you will want to visit your nearest Carver dealer for a personal audition of this remarkable instrument.

Specifications The Carver Receiver

POWER AMP:

POWER: 150 W/CHANNEL INTO 8 OHMS, WITH NO MORE THAN .05% THD

Power at Clipping: 157 W/channel into 8 ohms

Slew factor: >80

Frequency Bandwidth: 1Hz to 30kHz ± 1dB

Protection:
- Short Circuit
- DC Offset
- Low/High Frequency Trip

FM TUNER:

IHF Sens: 1.8uV

50dB Quieting Sens. in Stereo: 4.5uV

S/N: 76dB

Distortion: .2%

Freq. Resp: 20Hz to 15kHz ± 1dB

Stereo Separation: 42dB

Capture Ratio: 1.5dB

Noise Reduction: 7dB

Multipath Reduction: 13dB

AM TUNER:

Sens: 20uV

S/N: 55dB

Distortion: 0.9%

Selectivity: 42dB

PREAMP:

Distortion: .05%

S/N: 90dB

Freq. Resp: 20Hz to 20kHz + .5dB

Dimensions: 5.7"H, 17.3"W, 17.9"D, Weight 28.6 lbs.

	MONO	STEREO W/O CHARGE-COUPLED DETECTOR	STEREO WITH CHARGE-COUPLED DETECTOR
USABLE SENSITIVITY	75 ohms, 11.3 dBf/1.0 μV 300 ohms, 11.3 dBf/2.0 μV	34 dBf/14 μV 34 dBf/28 μV	16.3 dBf/1.78 μV 16.3 dBf/3.57 μV
50 DB QUIETING SENS.	75 ohms, 16.1 dBf/1.7 μV 300 ohms, 16.1 dBf/3.4 μV	37 dBf/19 μV 37 dBf/39 μV	23.5 dBf/4.0 μV 23.5 dBf/8.0 μV
SIGNAL/ NOISE RATIO	75 ohms, 82 dB @ 85 dBf 300 ohms, 82 dB @ 85 dBf	74 dB @ 85 dBf 74 dB @ 85 dBf	85 dB @ 85 dBf 85 dB @ 85 dBf
STEREO SEPARATION (WIDE)		1 kHz: 45 dB 100 Hz: 36 dB 10 kHz: 36 dB	45 dB 30 dB 25 dB

THE CARVER RECEIVER 900

WITH ASYMMETRICAL CHARGE-COUPLED FM STEREO DETECTOR

The Carver 900 is—in terms of power—the smallest of the Carver Receivers. However no other product currently offered by any other manufacturer delivers the same amount of power, features, specifications or out-and-out performance found in the Carver Receiver 900.

The Carver Receiver 900 sets standards which are unapproachable by any other comparably priced receiver. Because even with their "smallest" receiver, Carver has created a component which is truly powerful, musical and accurate.

No other receiver in this class has a clean 100 watts per channel FTC. Moreover, no other receiver can deliver a stunning 180 watts during the dynamic peaks that Digital demands.

And no other non-Carver receiver can resolve noisy FM into a clean, clear signal comparable to disc sources.

How many stations do you normally listen to? The Carver Receiver 900 can remember eight AM and eight FM stations. Just touch a button to switch between your favorites. Is the station noisy or weak? Engage the Carver Asymmetrical Charge-Coupled Detector and resolve interference-prone and distant stations into rich, full stereo. Suddenly your listening possibilities are vastly increased. No other brand of receiver has the technology to combine quartz-synthesized digital FM with added circuitry to solve the real-world interference problems that are present across the landscape. Naturally the 900 includes memory preset, auto-seek and manual scan as well as an accurate LED signal strength meter and stereo indicator.

At 100 watts per channel RMS, the Carver 900 provides serious power for today's new acoustic suspension speaker designs. Power to resolve records and tape with new impact and clarity. Power to ignite your imagination with a digital disc! Either way, Carver's "smallest" receiver will deliver pyrotechnic dynamics and freedom from clipping distortion that will render your favorite music with new clarity.

And of course the Carver 900 Receiver has The Right Features. You've eschewed separates because you like the combination of controls and features found on an all-in-one receiver, right? You'll soon discover that the Carver 900 delivers them all. Generous, human-engineered volume control with a silky feel you won't find on anything but larger Carver receivers. Defeatable center-detented bass and treble control. Large easy-to-use program source controls for CD's, FM, AM, Phono, and VIDEO sound inputs. Tape dubbing for 1:2 and 2:1 sources. Precision balance, loudness control and mono button. Dual speaker outputs. Switched and unswitched AC receptacles. Even a separate headphone circuit and output jack. The Carver 900 gives you everything you need to outdistance any comparably-priced receiver. Moreover, the 900 once-and-for-all settles the argument as to which modestly-priced receiver gives you the most features, power and noise-free FM reception.

Specifications Receiver 900

POWER AMP:

POWER: 100 W/CHANNEL INTO 8 OHMS, 20Hz TO 20kHz, WITH NO MORE THAN 0.15% THD

Power at Clipping: 108 W/channel at 8 ohms

Slew Factor: >68

Frequency Bandwidth: 1Hz to 30kHz ± 1db

Protection:
- Short Circuit
- DC Offset
- Low/High Frequency Trip

FM TUNER:

IHF Sens: 1.8uV

50dB Quieting Sens in Stereo: 5uV

S/N: 74dB

Distortion: .2%

Freq. Resp.: 20Hz to 15kHz ± 1dB

Stereo Separation: 40dB

Capture Ratio: 1.0dB

Noise Reduction: 7dB

Multipath Reduction: 13dB

AM TUNER:

Sens: 20uV

S/N: 55dB

Distortion: 0.9%

Selectivity: 42dB

PREAMP:

Distortion: .05

S/N: 90dB

Freq. Resp.: 20 Hz to 20kHz ± 1db

Dimensions: 4.33"H, 19"W, 17.9"D, Weight 26 lbs.

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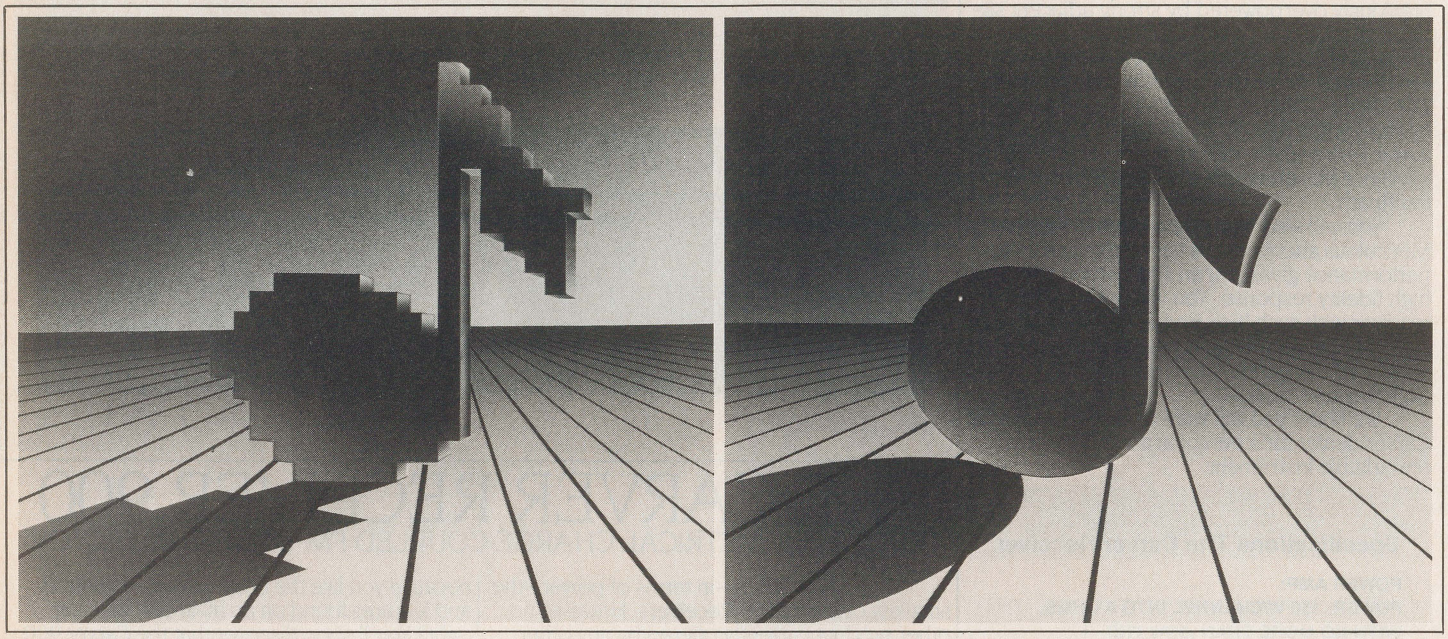
C A R V E R

DIGITAL TIME LENS TECHNOLOGY AND COMPACT DISCS.



Compact Discs represent the first significant improvement in audio sound sources since the stereo phonograph record. You don't have to be a "golden ear audiophile" to instantly perceive the remarkable sonic improvement.

Still, one must view digital sound with the same historical perspective applied to such breakthroughs as stereo, transistor amplification and FM broadcasts. Each was demonstrably better than what preceeded it. And yet each had shortcomings which were improved later on, when the initial blush faded.

Just as Bob Carver has enhanced FM reception, power amplification and the effect of stereo, so he has taken digital Compact Disc sound to its next plateau with Digital Time Lens Technology.

While hundreds of articles and reviews have been written on the digital audio recording process, it is valuable to review just how the process works in theory to better appreciate the Digital Time Lens' further contribution.

Analog recording uses magnetic tape to record varying amounts of musical signal. The more musical impulses in a given passage of music, the more magnetism is imparted on that portion of tape passing the recording head.

While this recording method has given us thirty years of memorable recordings, it labors under at least five physical limitations which cause audible degradation of the signal. 1) Tape has finite limits as to the amount of energy it can record. Saturation and distortion occur when the limit is reached, yet musical dynamics extend far louder and softer than the medium can handle. 2) Magnetic tape, by its very composition, imparts some internal energy which we hear as hiss. Thus quiet parts of recordings can suffer from annoying background noise. 3) it is very hard for tape to deal with extremely high and extremely low frequencies, again due to physical realities of tape oxide composition, speed and head configuration. 4) Even if problems 1-3 are minimized, the result gets scratched into the surface of a piece of plastic and played back by letting a small diamond wiggle around in the groove. Not theoretically the best method by any stretch of the imagination. 5) Even if said grooved plastic disc is the best virgin vinyl and the wiggly diamond is a $1000 handmade cartridge on a $2000 turntable, the record can come to a bad end in seconds at the hands of a) a five-year-old with a peanut butter sandwich, b) an inquisitive pussycat, c) your best friend after half a bottle of Cabernet.

Digital recording gets around all of these problems. The musical signal is sampled and analyzed by a computer which, in effect, impartially measures the signal with a ruler. It is recording impartial digital comments such as, "This segment is VERY loud+98dB -and goes down to 20Hz." "This segment is extremely quiet and contains a flute solo with harmonics to 19,000Hz." "This segment increases in dynamics by 60dB in less than a hundredth of second, etc."

Instead of trying to make a physical model of these measurements the way analog tape does, digital recording simply "prepares a report," coded in 1's and 0's much the way a floppy disc can contain the text of a book encoded in binary language.

The Compact Disc playback unit "reads" the report and changes the sound back to analog musical impulses which are fed into your hi-fi just like a tuner, cassette deck or phonograph source. Except that the digital source will be free of background hiss, contain the full range of frequencies from deepest fundamentals to almost inaudible highs and provide dynamics ranging from gossamer-soft to thunderstorm loud.

Since it's not limited by actually trying to emulate the musical signal, more sheer excitement, sonic impact and definition of individual instruments reaches your preamplifier. Unquestionably digital has proved a quantum leap ahead of previous recording and playback methods. You might compare it to a good stereo disc versus an Edison wax cylinder. That's how much better a Compact Disc can be than the average vinyl recording. Still, this wonderful process has received some qualified criticism from experts who have extremely good ears. Many professional musicians, audiophiles and audio journalists, while praising the quietness and dynamic range of Compact Discs, have often expressed a lingering disappointment in the way music itself sounds on many commercial examples. This is particularly evident when the compact disc is compared with a well-executed analog counterpart. The complaint boils down to a lack of ambience and spatial detail, along with a midrange which often has been described as sounding bright, hot and harsh.

When Bob Carver received his first Compact Disc player, he too was not prepared for the compromises in sound he heard on some discs. The three-dimensional perspective which his analog system provided in lush abundancy on phono discs evaporated into a flat, brittle wasteland. The next day, he purchased no less than 23 Compact Discs and their analog, vinyl counterparts and set about quantifying the differences.

As expected, the CD discs were quieter, exhibiting better dynamic range and richer, tighter bass. But testing uncovered two inherent flaws: **1) Different spectral energy balance.** The overall frequency response was shifted on the CD towards more midrange above 400 Hz; **2) The amount of Left-minus-Right channel information versus the amount of Left-plus-Right differed by about 1.25dB between analog and digital.**

It is important to understand that the Left-minus-Right (L – R) component of stereo carries the three-dimensional part of sound field information, much as is done with FM stereo (refer to the section on Carver's tuner circuitry). A deficiency of 1.25dB doesn't sound like much. But since power goes up as the square of the voltage, it means that analog records carry a whopping thirty-three percent more ambience information than digital discs. That's a noticeable reduction in three-dimensionality, imaging and other psychoacoustic factors that put the realism into music.

How does the Digital Time Lens correct these problems? Bob Carver's circuitry adjusts

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the ratio of L – R to L + R and restores the octave-to-octave balance originally intended by the musician and recording engineer as evidenced by the analog recording.

More specifically, Bob discovered that the L + R component of a digital disc had to be equalized somewhat differently than the L – R component of the digital disc so that it would match the analog disc (the analog version of the same musical recording). There were two equalization curves necessary to make the digital disc sound the same, exactly the same as its analog counterpart. In addition to equalizing the L + R band and the L – R band independently, it was necessary to increase the level of the L – R band so that it would match the L – R level that was on the analog disc.

Now, since the equalizations were different for the two bands, it was necessary to introduce a time correction in the L + R band because the equalization was steeper in the L – R and so the signal would go through the L – R with a greater group delay than it would go through the L + R signal chain and would arrive out of step, so a compensating delay, just micro-seconds, is employed in the L + R signal chain so that when the two signals arrive at the matrix to be turned back into left signal and right signal, they arrive without time domain errors.

The Digital Time Lens, Theory and Practice.

Bob Carver, along with many others, was displeased by the sound of the earliest CD's and decided to find out why some didn't sound the same as the LP versions of the same recordings. Unlike many who have complained about poor stereo imaging, lack of depth and strident, harsh treble – and who have blamed the CD digital system itself – Carver was enough of a mathematician and engineering theorist to know that the system itself was inherently blameless.

After extensive comparison tests between LP's and their CD versions, which included time-synched playings of both types of record while measurements and observations were made, Bob concluded that there were two major differences between certain CD's and their LP equivalents. The first had to do with stereo depth or separation. In any stereo program, the stereo effect is transmitted by the difference between left and right signals. Bob discovered that many CD's have less relative L – R information than do the LP's for the same programs at the same musical moment.

In order to see it, Bob devised a special test circuit that would amplify the difference. The figures show the Lissajous patterns obtained from the same instant of musical program in its LP (fig B2) and CD (fig B3) versions.

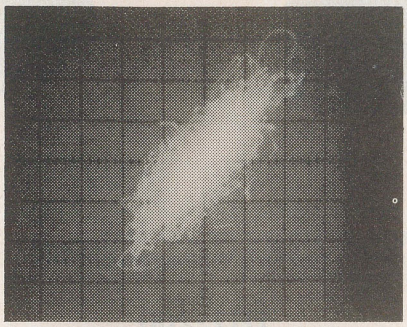

Fig. B2—Lissajous pattern showing (L – R)/ (L + R) ratio from an LP record.

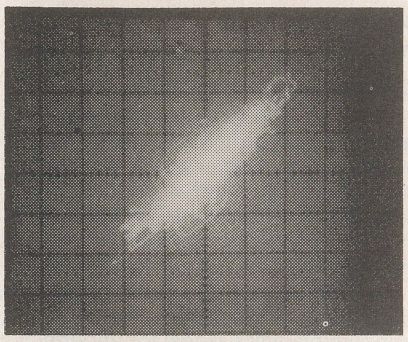

Fig. B3—The same instant of music as in Fig. B2 but taken from the CD version. Note the decreased difference (L – R) content, as shown by the narrowed trace.

In this type of display, a straight, thin diagonal line from the lower left to the upper right would represent a purely monophonic signal. The more stereo "difference" information there is, the more the line spreads out into an ellipse.

Notice that there is significantly more difference (L – R) signal in the LP version of the music!

The second major difference noted by Bob Carver between some CD's and their LP counterparts was a difference in equalization, or the overall frequency response. Using a fine moving-coil cartridge to play the LP versions of certain programs, Carver noted that there was a slight BOOST in the mid-bass region and a slight CUT in the mid-treble region compared with the response obtained when playing the CD version of the same program.

Bob's objective in designing the Digital Time Lens was to give the user the ability to introduce the converse of the two effects at will. That essentially is what he has done: If there is a deficiency of L-R signal in some CD's, the user can interpose a form of matrix-dematrix circuitry that will put back some of the extra L-R signal. If there is overly bright mid-treble and somewhat diminished mid-bass in a CD, the user can add a little mid-bass and attenuate some mid-treble frequencies by means of a switchable circuit. L.F.

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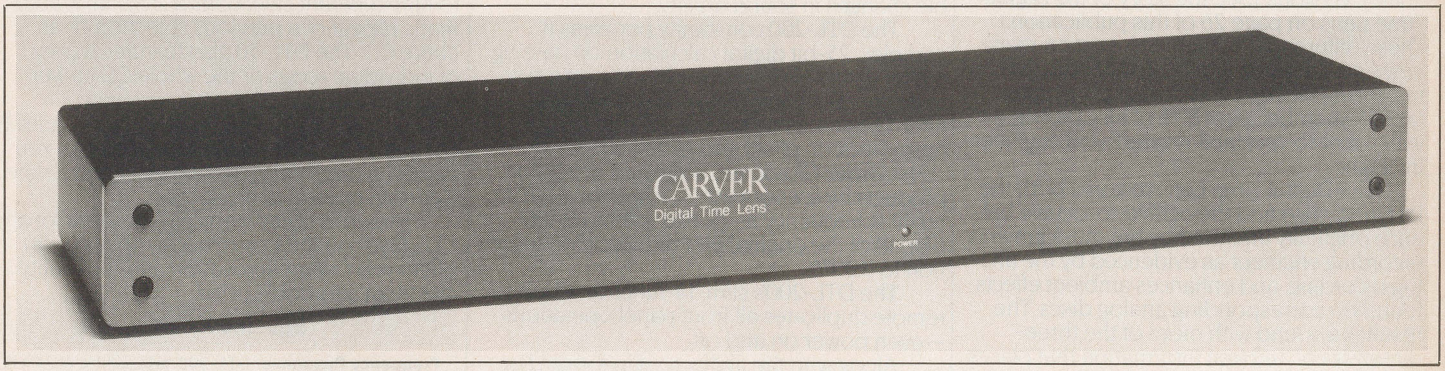
If you have read the excerpt from Audio Magazine included on this page, you will note that the reviewer qualified his comments by noting that not all CD's need the beneficial effect of the Digital Time Lens.

We concur. Later on in the review, the same reviewer noted, "I suspect that many owners will ... put little marks on their CDs that indicate whether they should be played with the Time Lens or not. I find nothing wrong with such an arrangement."

Again, we concur. It took a lot of courage on Bob Carver's part to play the part of the truthful child confronted with the Emperors's new clothes, the part of the person with the courage to point out that digital could often sound better.

But unlike a mere critic, Bob Carver has done something about the shortcomings he perceived. He has given every music lover the final tool necessary to open up an exciting new world of sound.



CARVER DIGITAL TIME LENS

You can't buy a better CD Player than the Carver CD Player. Impartial magazine reviews prove it. Qualified listeners prove it. Your own ears will prove it in a demo at your Carver Dealer.

Unfortunately, some of you already own Compact Disc Players. There is a solution.

The outboard Digital Time Lens adds the finishing touches of sonic accuracy and realism to Compact Digital Audio Discs. It turns an innovation into near musical perfection.

If you are willing to make a commitment to vastly improving your sound source with a Compact Digital Disc player, you should also go the short extra step that lets digital realize its true potential.

That step is a Carver Digital Time Lens, connected between your CD player and preamplifier.

Visit your nearest Carver dealer and ask for a demonstration of how we've "focused" digital playback into a crystal-clear image of the original performance.

Input: 2 v. 50k ohms
Impedance Output: 2 v.
Distortion: 0.005%.
Frequency Response: 20 Hz-20 kHz
Dimensions: 17⅜" wide, 4" deep, 1⅓" high.
Line Voltage: 120 VAC 60 HZ Dither signal: OdB. – 70 dB adjustable.

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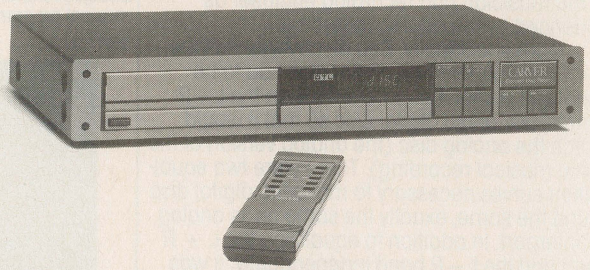
C A R V E R

CARVER DTL-200
COMPACT DISC PLAYER

CARVER DTL-50
COMPACT DISC PLAYER



The DTL-200 and DTL-50 use the latest laser pick-up systems, sophisticated oversampling and digital filtering technology, and well-engineered mechanical transport designs which ensure fast track access time and increased freedom from feedback.

The more samples, the more accurate the music. Carver Compact Disc Players begin with the most advanced digital-to-analog D/A translation circuitry available. Along with an audible signal ranging up to 20kHz, endless images of the signal at 40K, 80K, 160K etc. exist which must be removed from the signal to prevent harmonic problems. Many budget model Compact Disc Players place a simple anti-imaging filter after the digital/analog converter stage. Carver uses DIGITAL filtering ahead of the D/A converter through a process called double oversampling. The signal is passed through a shift register which delays the samples, so that the weighted average of a large number of signals is generated. Through a complex process, frequency bands are suppressed between 20kHz and 160kHz, eliminating harmonic distortion problems early on before the complicated D/A translation.

The exclusive Digital Time Lens. Both the DTL-200 and DTL-50 have the remarkable Carver Digital Time Lens to further enhance your listening enjoyment.

When Bob Carver first listened critically to CDs, he immediately detected differences between the digital version and well-mastered analog versions. (See the story of the Digital Time Lens on page 26 of this publication.) These differences continue to exist on many new Compact Disc releases, depending on the mastering facility, condition of the original tape (remember, over 80% of all CDs begin with a reel-to-reel tape master!) and engineering tastes.

The Digital Time Lens restores both the lost ambience and the octave-to-octave balance originally intended by the musician and recording engineer as evidenced by the analog recording, and enhances ambient effects found on corresponding analog discs. The result is a sound with more of the three-dimensional ambient information that places us in the same space with performers.

Sometimes more is not better. If one laser pick-up is good, many manufacturers have reasoned that customers will assume that three lasers must be better. The DTL-200 and DTL-50, along with several other of the world's finest CD players, use a sophisticated *single* laser system. (Sometimes Less is More.) Through a beam splitting process using aerospace-grade optics, a single laser's output is received by SIX diode pick-ups and monitored through ultra-high speed servo tracers. This approach increases Carver Compact Disc Players' ability to correct for mistracking caused by production flaws, fingerprints and dust.

DTL-200
COMPACT DISC PLAYER WITH DIGITAL TIME LENS AND TIME DOMAIN CORRECTION

- **14-function infrared wireless remote**
- **Digital Time Lens**
- **Time Domain Correction**
- **12-track programmability**

The DTL-200 is replete with easy-to-use features, the latest digital-to-analog translation technology, Carver's exclusive Digital Time Lens circuitry and an important new innovation, Time Domain Correction, which can actually adjust for imperfections in digital source material and disc manufacturing!

A built-in quality control computer. Time Domain Correction constantly monitors the incoming digital signal for imperfections and "glitches." These high frequency harmonics may be caused in the recording process, during the incredibly intricate Compact Disc mastering process or as part of the final production of the CD. Such errors in the digital bit-stream cannot be corrected by conventional tracking correction or D/A circuitry because they are part of the actual information being read off the CD. Yet they can add to overall harmonic distortion and cause audible changes in sound quality.

The DTL-200 constantly performs a complex, 25-bit digital calculation on passing digital data. This high speed error correction code, in conjuction with a 121-pole digital filter, terminates distortion-generating high harmonics. (In effect, this circuit acts as a "121st Order Crossover," rolling off distortion products by a whopping 728dB/octave!) The result is frequency response within 1/1000 of a dB of the original and reduction of distortion to 0.007%.

The DTL-200's slim, 14-function wireless remote duplicates all front panel operations — even power on and off.

Along with the ability to skip forward or backward, song-by-song, a touch of a key allows you to *audibly* review a disc, backward or forward, at many times normal speed.

This is especially useful in conjunction with the DTL-200's A-B Specific Phrase Replay/Repeat feature. If you wish to carefully analyze one section of a performance, make out indistinct lyrics or just repeat an incredible musical passage of any length repeatedly, you need only mark the beginning and end with one remote control key.

Naturally the DTL-200 also lets you repeat any specific track, or a whole Compact Disc for uninterrupted enjoyment. Select as many as twelve songs from a CD in any order. Delete the tracks you don't want to hear. Repeat your favorites several times. Or just rearrange their order. For classical music lovers, the DTL-200 also has complete indexing capabilities as well.

All functions are displayed on an easy-to-read but subtle LCD display including programming sequence, current selection number, total CD playing time, individual track playing time and total CD elapsed time.

CARVER DTL-50
COMPACT DISC PLAYER WITH DIGITAL TIME LENS

- **9-function infrared wireless remote**
- **Digital Time Lens**
- **9-track programmability**

Most manufacturers would be content to present the DTL-50 as their top-of-the-line CD player — it's that good. Incredible sonic performance, and the equally remarkable restorative capabilities of the Digital Time Lens are brought to your ears through an impressive list of features that make CD listening an exercise in comfort and precision.

Pick up the 9-function wireless remote control and power-up the DTL-50. It will now automatically play a pre-loaded CD while you remain in the comfort of your chair. Its Programmable Random Access Playback System makes track search and programming of up to nine different selections a snap, as is automatic repeat of a previous selection or an entire CD. The DTL-50 also features repeat of individual songs or the whole CD as well as precise index access.

Large, easy-to-use feather-touch controls include pause, fast forward and reverse. You can even monitor music at high speed to find a certain portion of a selection.

Superbly styled, sonically the equal of any CD player on the market today, the DTL-50 offers you Carver innovation and musicality at a most affordable price.

Specifications

Frequency Response: DTL-200	5Hz-20kHz @ 0dB ± 0.2dB **/DTL-50** 5Hz-20kHz @ 0dB ±0.5dB
Total Harmonic Distortion: DTL-200	0.007% @ 1kHz
DTL-50	0.008% @ 1kHz
S/N: DTL-200	100dB **/DTL-50** 96dB
Channel Separation: DTL-200	90dB @ 1kHz
DTL-50	86dB @ 1kHz
Dynamic Range: DTL-200	100dB **/DTL-50** 96dB
Wow & Flutter: DTL-200	Unmeasurable
DTL-50	Unmeasurable
Output Voltage: DTL-200	2.0V (F.S.) **/DTL-50** 1.9V (F.S.)
Size: DTL-200	3.5" H x 19" W x 11" D
DTL-50	2.56" H x 17.25" W x 11" D
Weight: DTL-200	14 lbs. **/DTL-50** 13 lbs.

ALL SPECIFICATIONS OR FUNCTIONS SUBJECT TO CHANGE WITHOUT NOTICE.

THE CARVER CAR AMPLIFIER

THE CARVER CAR AMPLIFIER introduces Magnetic Field Amplifier technology to automotive high fidelity. Finally, the traditional weak link between car stereo decks and modern speaker design has been replaced with Carver technology. Into 1/10th of a cubic foot, Bob Carver has engineered a complete 120 watts RMS per channel amplification system with the fidelity, accuracy and musicality demanded by the most critical reviewers and audiophiles.

ESSENTIAL POWER. Even before the exciting advent of car Compact Disc players, an abundance of power has been necessary to reproduce, without distortion, the frequency and dynamic range produced by modern decks.

Unfortunately, conventional amplifier technology is particularly unsuited to delivering this needed power to the specialized car interior environment. Like their home stereo counterparts, traditional car designs produce a constant high voltage level at all times, irrespective of the demands of the ever-changing audio signal—even those times when there is no audio signal at all! Because automotive amplifiers must, obviously, derive their power from the host vehicle, such an approach results in substantial drain to delicately balanced automobile electrical systems.

The Carver Magnetic Field Car Amplifier is signal responsive. Highly efficient, it produces only the exact amount of power needed to deliver each musical impulse with complete accuracy and fidelity. Thus the Carver Car Amplifier not only reduces overall long-term power demands, but produces the large amount of power necessary for reproduction of music at realistic listening levels without the need for oversize power supply components: Important considerations in the minuscule spaces which quality car design allocates to add-on electronics.

INTELLIGENT POWER. A hallmark of all Carver amplifiers is the careful integration of sophisticated speaker and amplifier protection circuitry. The Carver Car Amplifier is no exception.

Speakers are protected with a DC offset internal fault protection design which turns off the power supply at first hint of overload. An overcurrent detector mutes audio within microseconds of a short circuit, as does an output short circuit monitoring circuit. Together, these three circuits eliminate the potential need to replace fuses, revisit your autosound installer, or worse yet, replace expensive speakers due to a moment's indiscretion with your deck's volume control.

ASSIGNABLE POWER. Integrated bi-amplification and bridging circuits, along with The Carver Car Amplifier's compact configuration make it ideal for multiple-amplifier installations.

The built-in 18dB/octave electronic crossover allows use of two amplifiers in a pure biamplification mode without addition of extra electronics. Or, at the touch of a button, one Carver Car Amplifier can become a mono amplifier for subwoofers while the other Carver Amplifier handles full range. Or, for astonishing dynamic and frequency response, two Carver Car Amplifiers may be operated in mono mode into 8 ohms for a 240 watt per channel car system which will truly do justice to digital without taxing your car's electrical generation system.

INNOVATIVE POWER. Can 1/10th of a cubic foot of space hold yet more innovations? Yes.

Carver has addressed the ongoing problem of head-end/power amplifier level matching: Output of current car decks varies widely from brand to brand and model to model. The result can be a less than perfect match. The Carver Car Amplifier incorporates circuitry which compensates for variations in head-end output, reducing noise and optimizing signal-to-noise ratio. In addition, Carver has added a subsonic filter which removes inaudible power-robbing infrasonics before they can tax the amplifier and speakers. Finally, a delayed turn-on circuit activates the Carver Car Amplifier after your head-end unit has powered up, to eliminate starting pops and thumps.

ACCURATE POWER. It goes almost without saying that a product Bob Carver designs for the road carries the same superb electronic specifications that his home audio products are known for.

The Carver Car Amplifier is flat from 20Hz to 20kHz, down -3dB at 16Hz and 30kHz. Not coincidentally, the usual specifications given for Compact Discs. A signal-to-noise ratio of over 100dB means that, in even the most quiet luxury sedan, you will never be annoyed by hiss. The other specifications are equally as impeccable. You may peruse them in our literature or in independent reviews soon to appear.

ACQUIRABLE POWER. The remarkable Carver Car Amplifier is currently available for audition at Carver dealers across the country.

It is worth the journey. Whether you have a car system in need of the sonic excitement possible with abundant power, or are in search of the perfect complement to a new high-performance automobile, you owe it to yourself to experience the logical extension of Carver technology—The Carver Car Amplifier M-240.

Specifications

POWER OUTPUT STEREO MODE: (CONTINUOUS RMS POWER OUTPUT PER CHANNEL, BOTH CHANNELS DRIVEN, AT 13.8 VDC INPUT). 120 W INTO 4 OHMS, 20Hz TO 20kHz WITH NO MORE THAN 0.15% THD

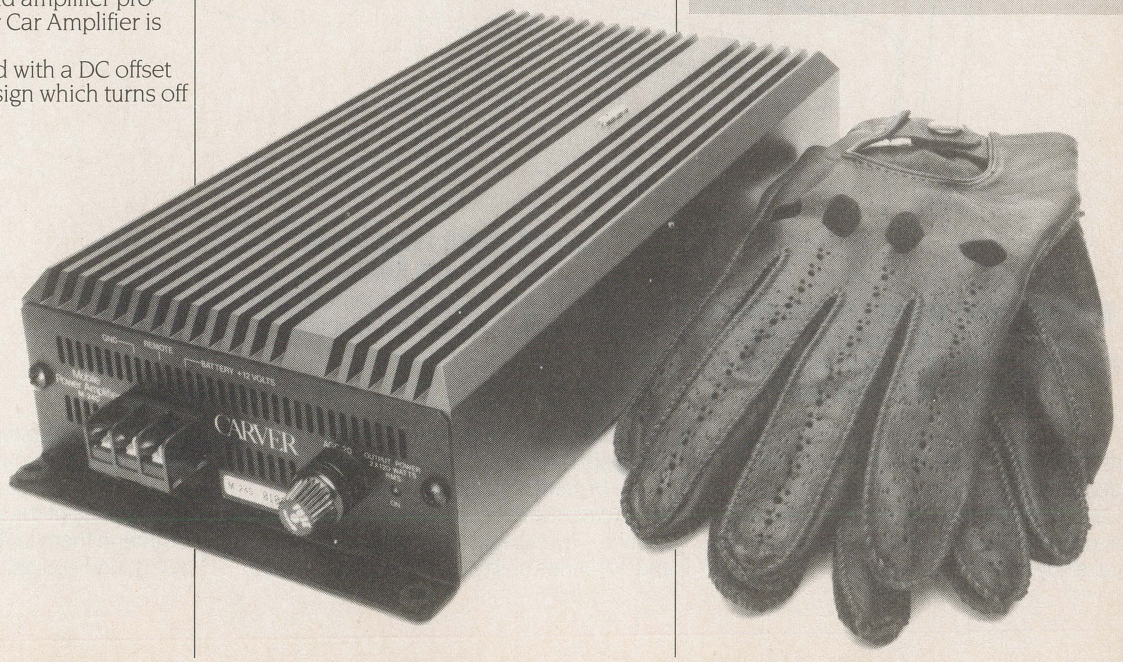
Power Output Bridged Mono Mode: (Referenced to 13.8 VDC input) 240 W into 8 ohms, 20 Hz to 20kHz with no more than .15% THD.

Input Sensitivity: Variable 250mV to 4V.

Signal to Noise Ratio: (Referenced to 120 W. A weighted into 4 ohms.) Greater than 100 db.

Crossover: 115 Hz, 18 dB/octave.

Weight: 4.7 lb.



ALL SPECIFICATIONS OR FUNCTIONS SUBJECT TO CHANGE WITHOUT NOTICE.

SILENT RUNNING.

INTRODUCING THE ONLY AM/FM TUNER/CASSETTE DECKS CAPABLE OF CUTTING MULTIPATH INTERFERENCE UP TO 92.9%! FROM CARVER, NATURALLY.

The new TX-Seven and TX-Nine auto-reverse AM/FM tuner/cassette audiophile decks represent yet another example of Carver's ability to solve previously insoluble audio problems and deliver you more musical enjoyment.

CARVER TUNER TECHNOLOGY TAKES TO THE ROAD.

Each deck employs the same Asymmetrical Charge-Coupled FM Detection circuitry as Carver's revolutionary TX-11a home tuner, along with an ingenious automatic computer logic-controlled antenna switching system that further vanquishes multipath distortion.

In point of fact, no other autosound tuner/cassette decks in the world – regardless of price – even begin to approach the TX-Seven and TX-Nine's ability to maintain a hiss-free, glitch-free, interference-free FM listening environment in your car.

Both also possess a multitude of other useful, state-of-the-art features which will recommend them to the most discriminating autosound audiophile.

COLLIDING WITH MULTIPATH DISTORTION.

By its very definition as a moving reception point, a car's FM tuner constantly falls prey to signal reflections from hills, skyscrapers, bridges and even other vehicles. These extra phase modulating signals trick conventional tuners into producing audible sounds we call multipath.

Startling outbursts of clicks, pops, "picket fencing" and other rude and indescribable sounds.

The trouble is, by its very nature, multipath distortion cannot be cured by conventional circuit "improvements." In fact, the better an autosound tuner is, the more faithfully it is deceived into converting phase modulation into ghastly-sounding interruptions in your favorite station.

COMPUTER LOGIC-CONTROLLED DIVERSITY ANTENNA SWITCHING DRIVES AROUND MULTIPATH.

One way to get temporary relief from interference at home is to move the antenna around slightly. That is in effect what the Carver TX-Seven and TX-Nine do with sophisticated circuitry in your car. Instead of physically moving one antenna, they turn your rear defroster into a second *separate antenna*, 180 degrees out of phase with the first. When multipath occurs, a special smart circuit automatically switches (at the speed of light) to the other antenna, automatically correcting phase and eliminating the multipath before you ever hear it. In serious cases, the circuit actually uses both antenna inputs at once, deriving a signal through sum and difference principles.

ASYMMETRICAL CHARGE-COUPLED FM DETECTION CIRCUITRY BRINGS IT ON HOME.

What little multipath distortion gets through the TX-Seven and TX-Nine's unique smart antenna system runs headlong into the remarkable tuner innovation *High Fidelity Magazine* described as "distinguished (by) its ability to pull clean, noise-free sound out of weak or multipath-ridden signals."

It specially treats the critical, multipath-prone left-minus-right (L-R) signal with a Charge-Coupled circuit that detects "dirty mirror image" signals and cancels them before they can reach your ears. Then the Leading Edge Detector circuit processes the final 5% of the L-R and interleaves it with the tuner's receiver matrix.

Alone, without antenna diversity switching, the TX-Seven and TX-Nine's Asymmetrical Charge-Coupled FM Detection Circuit delivers *a net noise and distortion reduction of 92.9%*. Together, they set a new standard for clear, clean FM autosound reproduction.

THE MULTIPATH MARATHON: REAL WORLD CONFIRMATION IN THE MISTS OF THE NORTHWEST.

Bob Carver is both a theorist and a practical inventor. Circuits that work on paper get exhaustively tested in the field before release.

So he assigned a hapless engineer to map out the ultimate multipath-ridden route for confirmation of the TX-Seven and TX-Nine's special circuitry. With mountains, hills, huge evergreen trees, skyscrapers, large steel bridges, good robust traffic jams and a few assorted six-story-tall Boeing hangars, it didn't take long to map out a 6-mile course that could regularly deliver at least *287 separate multipath occurrences.*

Engaging the Asymmetrical Charge-Coupled FM Detection circuit and automatic antenna switching reduced occurrences to an average of *two* during the same 6-mile course while listening to the same stations!

Although results may vary in your locale, the same 90+% reduction in multipath has been confirmed in other widely diverse portions of the U.S.: The TX-Seven and TX-Nine work, and work well.

OTHER REMARKABLE TUNING FEATURES, TOO.

First, the TX-Seven and TX-Nine also receive Long Wave and Short Wave stations. And of course, both tuner/cassette decks have plenty of random presets...you can tune any fifteen AM, FM, SW or LW stations quickly for instant recall. Plus auto-scan and manual tuning.

But they also have a system that makes setting up all fifteen presets virtually instantaneous. Just press the button marked BEST and the tuner's logic circuitry will *automatically select* the fifteen cleanest, strongest signals and lock them in on the presets!

And that's *in addition* to your fifteen individual random presets.

As with all Carver products, the TX-Seven and TX-Nine do not sacrifice ease of use for useless, complicated frills. Instead, they answer every possible need without resorting to elf-sized buttons or glitzy flashing light displays.

Their metal-compatible, Dolby® NR, auto-reverse cassette sections rival any in the world. Both the TX-Seven and TX-Nine have separate bass, treble, balance and loudness controls and a full-function LCD display with night illumination.

All operations are signaled with a gentle "beep" that keeps your eyes on the road, not on the compact, ergonomically-styled deck.

There's even a security code system that renders the TX-Seven or TX-Nine inoperable to anyone but you (and a window sticker to impart this discouraging information to others).

Or, if you prefer, use the quick removal system that slips out your TX-Seven or TX-Nine in seconds for storage in trunk or house.

THE BEGINNING OF THE PERFECT AUTOSOUND LISTENING ENVIRONMENT.

Out of the hundreds of tuner/cassette models currently available, only the TX-Seven and TX-Nine deliver home-stereo quality FM in your car. They achieve it with unique technology. And they are built to outlast your car, no matter what kind of climate you live in.

Coupled with a clean amplifier, such as The Carver M-240 Car Amplifier and state-of-the-art speakers, your ability to transform your car into a concert hall is almost unlimited.

We urge you to audition the TX-Seven and TX-Nine at your Carver dealer soon. They can put you in the driver's seat of a unique, interference-free musical experience.

THE TX-SEVEN AND TX-NINE

TUNER: ◊ Asymmetrical Charge-Coupled FM Stereo Detector ◊ Automatic Computer-Controlled Diversity Antenna Switching ◊ AM, FM, Long Wave and Short Wave Bands ◊ 15 Random Presets ◊ BEST Circuit for Auto-Selection of 15 Strongest Stations (in addition to 15 individual presets) ◊ Preset Frequency Auto-search ◊ Auto-scan Tuning ◊ Manual Tuning ◊ LCD Frequency Read-out. CASSETTE: ◊ Auto-reverse ◊ Programmable Music Search (TX-Nine only) ◊ Computer Logic Activated Controls ◊ Dolby B NR ◊ Dolby C NR (TX-Nine only) ◊ Metal Tape Bias Selector. GENERAL: ◊ Security Code System ◊ Audible Confirmation of All Functions ◊ Separate Bass, Treble, Balance and Loudness Controls ◊ Full-function LCD Read-out w/Night Illumination ◊ CD Line Level Input (TX-Nine only) ◊ Quick Release Removal System ◊ Year Warranty. SPECIFICATIONS: ◊ Tuner S/N, 76dB ◊ S/N-65dB with Dolby B NR, 70dB with Dolby C NR ◊ Tape Frequency Response 20 Hz-15 kHz ◊ Dimensions, 180mm W x 51mm H x 160mm D (DIN mount)

Dolby is a registered trademark of Dolby Laboratories.

CARVER Corporation, PO Box 1237, Lynnwood, WA 98046

POWERFUL MUSICAL ACCURATE

C A R V E R

THE AMAZING LOUDSPEAKER

DIRECT DRIVE FULL RANGE RIBBON SYSTEM WITH UNIDRIVE PLANAR SUBWOOFER SYSTEM

- **Flat Panel Design**
- **25Hz to 40,000Hz Response**
- **85dB (@ 2.83 volts, 1 meter efficiency)**
- **1000 Watt RMS Power Handling**
- **Black Lacquer Piano Finish**
- **Superlative Sound**

Expecting the unexpected. When Bob Carver designs a loudspeaker, you can be assured of three things. First, it will be out of the ordinary: Bob simply does not approach design problems in stale, traditional ways. Second, the result will be powerful, musical and accurate. And finally, it will deliver superlative performance at an affordable price.

The Amazing Loudspeaker is all this and more. A pure, uninterrupted line source of proprietary ribbon drivers edge—mounted in a trapezoidal panel. With an array of state-of-the-art planar subwoofer drivers delivering solid bass support.

How Bob Carver broke the rules. One look at The Amazing Loudspeaker and you know you're not dealing with conventional speaker design. In the process of achieving incredible imaging, ruler-flat frequency response, steel-fisted dynamics and surprising efficiency, he has broken free of many of the "rules" which are responsible for the endless spectrum of similar sounding rectangular boxes which line dealers' sound rooms.

RULE: A *speaker must have an enclosure.* Virtually all conventional drivers are designed to resonate within a finite volume. Unfortunately, a box contributes its own resonances and negates other acoustic opportunities which a flat panel design can take advantage of. Now, Bob Carver is not the first to eliminate the traditional enclosure. The very few designers to break this rule have produced some of the finest—the most expensive—speakers in the world. Bob shared their fascination with the flat panel design's ability to cancel all sounds 90 degrees off axis, allowing a strong, uncluttered first arrival of sound. Our earbrain system then uses this pristine phase coherent arrival to create a sharply focused and stunning image that floats majestically in space. In addition, a flat panel design can make special use of room acoustics by reflecting the rear sound waves from the back wall. The resulting 4-12 millisecond delay, combined with the pristine first arrival produces an uncanny sonic image with a large soundstage and a wonderfully believable sense of acoustic space. But to produce such a design has, until now, been limited by some rules of its own.

RULE: *Ribbon drivers are inefficient.* A single transducer surface that can reproduce all frequencies from 25Hz up to 40,000Hz is a breathtaking experience. The infinitely detailed, high end, pure midrange and sonorous high bass have a coherency and immediacy which is at once musical and yet totally transparent and uncolored. Unfortunately, previous fullrange ribbon designs required vast power to achieve even modest volume. Carver went back to the drawing boards to design a special ribbon driver with the most intense magnetic force field ever produced in this type of driver. Coupled with a Carver power amplifier, the results are intense peak momentary levels above 106dB Sound Pressure Level that helps give music the lifelike quality we all search for.

RULE: *Ribbon drivers are acoustically difficult to mount in a speaker.* On one hand, to act as a dipole radiator (and cancel off-axis sounds) a ribbon should be mounted in free space, away from reflective surfaces. Yet it must be mounted in a baffle to smooth and extend its response. By mounting it along the extreme inside edges of The Amazing Loudspeaker, the best of both worlds has been achieved.

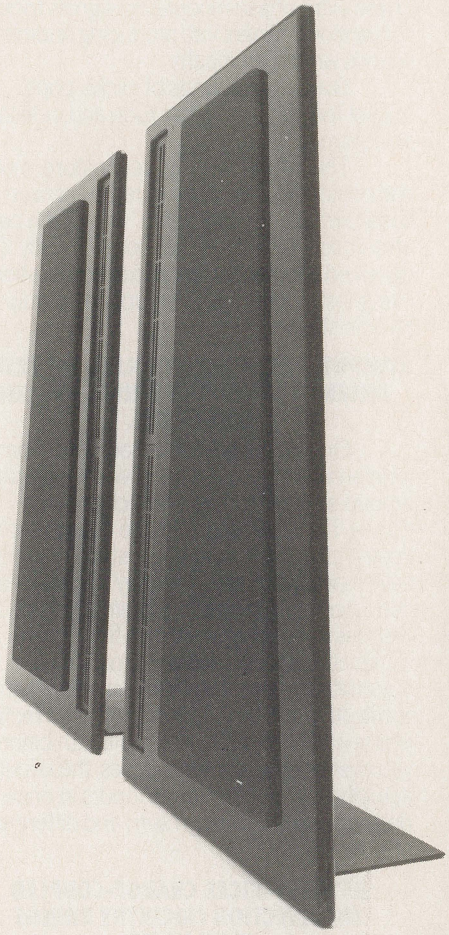
RULE: A *flat panel speaker can't produce as much bass.* Even some very expensive flat panel speakers are a bit shy in the lowest octave. Bob wanted awesome sound pressure levels as far down as 25Hz. To do so he gave enough displacement to The Amazing Loudspeaker's four Unidrive Planar Subwoofers to produce stunningly tight low bass without a trace of the resonant box boom usually produced by normal enclosures. Full 440 cubic inches of displacement (an average 12" woofer has less than 60 cubic inches) capable of delivering 108dB Sound Pressure Level AT 25Hz!!

RULE: A *flat panel speaker can't be placed close to the wall.* You may be asking yourself how your living room can hold a speaker 66 inches high. The answer is because The Amazing Loudspeaker is just 1½ inches thick and can be placed almost flat against the wall. Other flat panel designs rely on fragile drivers which can't tolerate a powerful reflected backwave. However, The Amazing Loudspeaker has been designed to be almost totally impervious to the degradation caused by strong reflected waves. So it actually takes up less floor space than other, more expensive flat panel speakers or less capable box designs.

RULE: *Flat panel speakers are expensive.* Indeed, most of the world's most costly esoteric models take advantage of the free field doublet design which has the ability to deliver flawless first arrival sound with realistic ambiance from rear wall reflections. Bob's contribution to loudspeaker technology is his uncanny ability to make the exquisite affordable. In critical listening evaluation with the finest sound sources, we think you will agree that The Amazing Loudspeaker holds its own with legendary designs costing two to five times as much. And we are virtually assured that you will leave your auditions of The Amazing Loudspeaker convinced that no other speaker in its immediate price range even approaches it in coherency, detail of imaging, richness of sound field, bass response and overall musicality.

It looks as dramatic as it sounds.

Amaze yourself soon. If words could suffice to describe the exhilarating uplift that springs from the musical experience, then Beethoven could have merely written descriptive memos instead of composing whole symphonies. We could expend thousands more words extolling the musical virtues of The Amazing Loudspeaker, but (thankfully) print is a pale substitute for the spine-tingling reality that awaits you at your nearest Carver dealer.



Suffice to say that The Amazing Loudspeaker was designed for the demanding ears of the uncompromising. With great pride, several broken rules and a remarkably affordable design, we invite you to listen and experience the musical joy of The Amazing Loudspeaker.

Specifications

Frequency Response: 25Hz to 40kHz, -3.0 dB from reference level

Impedance: 4.0 ohms, resistive

Sensitivity: 85dB, 1 meter, 2.82 Vrms

Maximum SPL: 113dB, symphonic music power spectrum, 110dB, rock music power spectrum

Crossover: Ribbon operates from 25Hz to 40,000Hz. Subwoofer system augments ribbon below 90Hz.

Finish: Ebony lacquer with gold and anthracite highlights

Recommended Power: 100 watts to 350 watt/channel, 8 ohm rating

Dimensions: 66"H, 30"H, 1½"D (panel size)

Weight: 145 lbs. each

ALL SPECIFICATIONS OR FUNCTIONS SUBJECT TO CHANGE WITHOUT NOTICE.

C A R V E R

AUTHORIZED CARVER DEALERS*

*A relatively but not, necessarily, completely accurate listing of AUTHORIZED CARVER DEALERS. The following is subject to on-going change. (Summer 1986)

ALABAMA

Huntsville
Sound Stage
Mobile
Fidler Hi Fi

ALASKA

Anchorage
Pyramid Audio
Fairbanks
Hoitts' Stereo & Strings

ARIZONA

Mesa
Hi Fi Sales
Phoenix
Buzz Jensen's Sound Advice
Jerry's Audio Exchange
Tucson
Jerry's Audio Exchange

ARKANSAS

Fayetteville
Stereo One
Fort Smith
Stereo One
Harrison
Listening Room
Little Rock
Walloch Home Center

CALIFORNIA

Bakersfield
Sound Advice
Canoga Park
Rogersound Labs
El Torro
Genesis Audio
Encino
Sound Factor
Glendale
Marconi Radio
Huntington Beach
Haven's and Hardesty Audio
Irvine
Soundquest Audio/Video Gallery
Lancaster
California Sound Works
Los Angeles
Ametron
Paris Audio
Royal Sound
Newport Beach
Newport Audio
North Hollywood
Sound Factor
Orange
Absolute Audio
Orlando
Audio Spectrum
Pasadena
Rogersound Labs
Redondo Beach
Systems Design Group
Riverside
Speakercraft
San Clemente
Electronic Dreams
San Diego
Sound Company
San Luis Obispo
Audio Ecstasy
Santa Monica
Rogersound Labs
Sherman Oaks
Paris Audio
Systems Design Group
Torrance
Paris Audio
Rogersound Labs
Van Nuys
Rogersound Labs
Ventura
Dexter's Camera and Hi Fi
Westminster
Rogersound Labs

COLORADO

Arvada
Soundtrack
Aurora
Soundtrack
Boulder
Listen Up Audio
Soundtrack
Wave Length Stereo
Colorado Springs
The Sound Shop
Denver
Listen Up Audio
Soundtrack
Soundtrack/Dashboard
Durango
Gramaphone Audio/Video
Grand Junction
Sound Company
Littleton
Soundtrack
Thorton
Soundtrack

CONNECTICUT

Avon
Hi Fi Stereo House
Brookfield
Sounds Incredible
Darien
Music Box
Fairfield
Audio Design
Greenwich
AUD-VID
Manchester
Sounds Great
Newington
Hi Fi Stereo House
Sounds Great
New Haven
Take 5 Audio
New London
The Stereo Lab
Orange
Sounds Great
Stamford
County Audio

FLORIDA

Altamonte Springs
Audio Spectrum
Boca Raton
Vern's Stereo and Electronics
Bradenton
Kuban's
Daytona Beach
Audio Video Analysts
Stereotypes
Ft. Lauderdale
MAE
Ft. Meyers
Stereo World
Hialean
Brandsmart U.S.A.
Hollywood
Audio Encounters
Jacksonville
Audio Tech
Lakeland
The Sound Factory
Melbourne
Audio Trend
Merritt Island
Southern Audio
Miami
Electronic Equipment
Infinite Audio Systems
Ritz Shop - Las Fabricas
Sounds Great Center
Sunday Electronics
Naples
House of Hi Fi
North Miami Beach
Harris Audio Systems
Orange Park
Audio Tech
Orlando
Audio Spectrum
Panama City
World Wide Stereo
Pensacola
All Pro Audio
Sarasota
Kuban's
St. Augustine
Audio Design
Tallahassee
Stereo Store
Tampa
Sensuous Sound Systems
Vero Beach
Lake Audio
West Palm Beach
The Sound Shack

GEORGIA

Athens
Hi Fi Buys
Atlanta
Hi Fi Buys
Duluth
Hi Fi Buys
Kennesaw
Hi Fi Buys
Marietta
Hi Fi Buys
Macon
Georgia Music
Morrow
Hi Fi Buys
Riverdale
Hi Fi Buys
Tucker
Hi Fi Buys
Union City
Hi Fi Buys

HAWAII

Honolulu
Bose Home Entertainment Center

IDAHO

Boise
Good Ear Audio/Video
Burley
The Sound Company
Hailey
Sentinel Fire & Security
Sandpoint
Electracraft
Twin Falls
The Sound Company

ILLINOIS

Champaign
Appletree Stereo
August Systems
Charleston
Mr. D's
Chicago
Musicraft
United Audio Centers
Decatur
Appletree Stereo
Deerfield
United Audio Centers
Dekalb
Appletree Stereo
Evergreen Park
Musicraft
Hoffman Estates
Electronics Exchange
Homewood
Musicraft
Morton Grove
Musicraft
Mount Prospect
Simply Stereo
Niles
United Audio Centers
Normal
Appletree Stereo
Oak Park
Musicraft
Palatine
Musicraft
Palos Hills
Gill Custom Sound
Riverdale
Simply Stereo
Rockford
Appletree Stereo
Sidney
August Systems
Springfield
Sundown One
Vernon Hill
United Audio Centers
Villa Park
Hi Fi Hutch
Musicraft

INDIANA

Bloomington
Hoosier Electronics
Carmel
Sound Productions
Evansville
Risley Electronics
Fort Wayne
Lehman Electronics
Indianapolis
IRC Audio
Lafayette
Pro Audio
South Bend
Audio Specialists
Terre Haute
Hoosier Electronics
Valpariso
Audio Junction
Vicennes
Risley Electronics

IOWA

Ames
Stereo Sound Studios
Des Moines
Stereo Sound Studios
Triad Productions
Iowa City
Glaser Audio
Marshalltown
John's Hi Fi & Sound
Mason City
Sound!
Sioux City
Audio Emporium

KANSAS

Great Bend
Audio Electronics
Hays
Touch Feeling of Sound
Hutchinson
Hayes Sight & Sound
Junction City
Audio Junction
Lawrence
University Audio
Mission
Accent Sound
Overland Park
Audio Electronics
Salina
Electronics
Electronics Unlimited
Wichita
Audio Visions

KENTUCKY

Bowling Green
Bowling Green Audio
Glasgow
Bowling Green Audio
Lexington
Ovation Audio-Video
Louisville
Music City Of Kentucky
Madisonville
Risley Electronics
Owensboro
Risley Electronics
Paducah
Risley Electronics

LOUISIANA

Baton Rouge
Kadair's
Harahana
New Sound Trek
Gretna
New Sound Trek
Lafayette
Sound Electronics
Lake Charles
Video Trends
Matarie
New Sound Trek
New Orleans
New Sound Trek
Shreveport
Products Unlimited

MAINE

Westbrook
Sound Cellar

MARYLAND

Annapolis
Midshipmens Store
Spaceways Sound
Baltimore
Soundscape
Bethesda
Audio Associates
Professional Products
Langley Park
Audio Associates
Laurel
Audio Associates

MASSACHUSETTS

Belmont
Trolley Stereo
Boston
New England Audio
Brighten
New England Audio
Brockton
Sound Track Audio
Burlington
New England Audio
Cambridge
Lechmere
New England Audio
Chestnut Hill
New England Audio
Danvers
Lechmere
Liberty Tree
Dedham
Lechmere
New England Audio
Framingham
Lechmere
Natural Sound
New England Audio
Hyannis
New England Audio
Sound Dynamics
Littleton
Radioshack
Needham Heights
Rodger's Organ of New England
Northampton
Sound & Music
Pittsfield
Taylor's Sound
Seekonk
Lechmere
Sounds Great
Shrewsbury
Integrated Tech Systems
Springfield
Lechmere
W. Springfield
Sounds Great
Woburn
Lechmere

MICHIGAN

Ann Arbor
Hi Fi Buys
The Stereo Center
Birmingham
The Gramaphone
Flint
The Stereo Center
Grand Rapids
Stereo Showcase
Grosse Point Woods
Point Electronics
Kalamazoo
Stereo Showcase
Lansing
Hi Fi Buys
Midland
Hi Fi Buys
Muskegon
The Stereo Showcase
Petoskey
Kurtz Music
Traverse City
Kurtz Music Center
Saginaw
Listening Room

MINNESOTA

Brooklyn Center
Audio King
Burnsville
Audio King
Edina
Audio King
Minneapolis
Audio King
Minnetonka
Audio King
Rochester
Mountain Electronics
Roseville
Audio King
St. Cloud
Sound Electronics
St. Paul
Audio King

MISSISSIPPI

Jackson
Hooper Sound
Meridian
Hooper Sound

MISSOURI
Cape Girardeau
Stereo One
Jefferson City
The Stereo Buff
Rolla
End of the Rainbow
Springfield
House of Sound
Stereo Buff
St. Louis
Antech Labs
Best Sound Company

MONTANA
Great Falls
Rocky Mountain Hi Fi
Helena
The Stereo Shop

NEBRASKA
Columbus
Good Music
Lincoln
Stereo West
Omaha
Custom Electronics
Stereo West

NEVADA
Las Vegas
Import Audio
Reno
Audio Authority

NEW HAMPSHIRE
Concord
Sound Waves
Hanover
Hanover Audio
Manchester
Lechmere
Re: Sound
Nashua
Re: Sound
Newington
Re: Sound
Salem
Cuomo's

NEW JERSEY
Deptford
Hi Fi Connection
Franklin
Franklin Lakes Stereo
Lawrenceville
Hal's Stereo
Maple Shade
Bryn Mawr Stereo
Marlton
Hi Fi Connection
Morristown
Sight & Sound
New Brunswick
Hi Fi Haven
Northfield
Sound Incorporated
Paramus
Harvey Electronics
Leonard Radio
Toms River
Rand's Camera & Hi Fi
Upper Montclair
C.S.A. Audio
Wyckoff
Conklin's

NEW MEXICO
Albuquerque
Sound Ideas
West Coast Sound Systems
Las Cruces
The Sound Room
Sante Fe
The Candyman
West Coast Sound

NEW YORK
Albany
Mom's Stereo Warehouse
Sounds Great
Alfred
Jericho Audio
Amherst
Sounds Great
Binghamton
JSG Audio
Brooklyn
Innovative Audio
Cedarhurst
Audio Exchange
Commack
Sound Approach
Depew
Sounds Great
Fresh Meadows
Sound Stage Audio
Glens Falls
Audio Genesis 8
Greece
Sounds Great
Henrietta
Sounds Great
Hicksville
Audio Exchange
Designatron's Stereo Store
Ithaca
Sound Image
Nanuet
Eardrum of New Jersey
New York
Audio Exchange
Cosmophonic Sound
Grand Central Radio
Harvey Electronics
Leonard Radio
Lyric Hi Fi
Thalia Hi Fi
Sound Stage Audio
Oneonta
Soundtrack Hi Fi
Patchoque
Square Deal Radio & T.V.
Potsdam
Northern Music Company
Queensbury
Drivers Seat
Rochester
Maynards Sound World
Salamanca
The Soundtrack
Syracuse
Sounds Great
Tanawanda
Stereo Plus
Vestel
Hart Electronics
Wappingers Falls
Sound Odyssey
Westbury
Audio Exchange
West Seneca
Stereo Plus
White Plains
Audio Experts
Harvey Electronics
Lyric Hi Fi
Williamsville
Stereo Plus
Woodside
Leonard Radio

NORTH CAROLINA
Asheville
Sound One
Conover
Tri-City Electronics
Durham
Tart's
Fayetteville
Tart's
Greenville
Todd's Stereo
High Point
Sound Source
Morehead City
Anderson Audio
Raleigh
Hi Fidelity International
Rocky Mount
Tart's
Wilmington
Tart's

NORTH DAKOTA
Bismark
Egger's Audio
Minot
Midwest Audio

OHIO
Akron
Audio Craft
Golden Gramaphone
Cambridge
Stereo Limited
Canton
Audio Corner
Metradyne Corporation
Cleveland
Audio Craft
Cincinnati
Swallen's
Columbus
Digital Sights & Sounds
Palmer Electronics
Dayton
Carlin Audio
Findlay
Audio Craft West
Heath
Threshold Audio
Lima
Hart Audio
Lorain
Grasso's Audio
Mansfield
Swallen's
Mayfield Heights
Audio Craft
Middleton
Swallen's
Parma Heights
Phil Reddish Stereo
Reynoldsburg
Digital Sights & Sound
Sandusky
Audio Force
Toledo
Audio Craft West
Westlake
Audio Craft
Wooster
Far East Audio

OKLAHOMA
Bartlesville
Copeland Appliance Center
Edmond
K and F
Lawton
Audio Tech
Midwest City
Audio Midwest
Shawnee
Rave Electronics Sound System
Stillwater
Audio Sound
Tulsa
Audio Advice

OREGON
Beaverton
High Technology Systems
Bend
Audio Video Labs
Corvallis
Good Guys Stereo
Eugene
Good Guys Stereo
Gresham
Fred's Sound of Music
Klamath Falls
Sound Chamber
La Grande
La Grande Stereo & Music
Medford
Larsons Home Appliance
Portland
Fred's Sound of Music

PENNSYLVANIA
Bryn Mawr
Bryn Mawr Stereo
Camphill
Bryn Mawr Stereo
Clearfield
Mack Audio Electronics
Erie
House of Records
Frazer
Bryn Mawr Stereo
Gibsonia
The Listening Post
Greensburg
Pat's Stereo Outlet
Jenkintown
Bryn Mawr Stereo
Lewisburg
M & M Stereo
Montgomeryville
Bryn Mawr Stereo
Natrona Heights
Stereo Land
Philadelphia
Bryn Mawr Stereo
Pittsburgh
Audio Junction
The Listening Post
World Wide Stereo
Quakertown
Bryn Mawr Stereo
Throop
Shehadi Stereo
Washington
Stereo Outlet
West Reading
DS Audio
Whitehall
Bryn Mawr Stereo
Winber
Pro Audio

RHODE ISLAND
East Providence
New England Audio
Providence
New England Audio
Warwick
Lechmere
New England Audio
Sounds Great

SOUTH CAROLINA
Anderson
John B. Lee 'For Music'
Charleston
Read Brothers Stereo
Columbia
Images Video & Electronics
John B. Lee 'For Music'
Florence
Tart's
Greenville
John B. Lee 'For Music'
Greenwood
John B. Lee 'For Music'
Rock Hill
Visionex

SOUTH DAKOTA
Brookings
Stereo Town/Media Marketing
Rapid City
Team Electronics
Sioux Falls
Pro Audio

TENNESSEE
Nashville
Audio Systems

TEXAS
Beaumont
Beaumont Sound Company
Bryan
Sound Waves
College Station
Audio Video
Corpus Christi
Tape Town Audio Video
Dallas
Digital Center
Labute Professional Sound
Ft. Worth
Marvin Electronics
Houston
B&M Electronics
Groove Audio & Video
Horizon Satelite Center
Sheffield Audio
Laredo
Metex International
Longview
Stereo & Record Center
McAllen
El Centro Sound
Nacodoches
Spinet Music
Odessa
Harold's Electronics
Richardson
Stereo Dallas/Richardson
San Antonio
Bill Case Sound
Stereo International
San Marcos
Discovery Audio Video
Texarkana
Audio Center
Sound Towne
Tyler
Stereo & Record Center
Waco
Audio Video of North America Sound
Wichita Falls
Audio Tech

UTAH
Logan
Lynn's Audio Video
Ogden
The Hi Fi Shop
Saint George
Arrow Audio Video
Salt Lake City
Audio Works

VERMONT
Essex Junction
Creative Sound
Rutland
Sound Directions
South Burlington
Audio Den

VIRGINIA
Alexandra
Excalibur Audio
Arlington
Audio Associates
Charlottesville
Stereotypes
Franklin
Audio Showroom
Hampton
Sound Shop
Harrisonburg
Ace Music'n Electronics
Leesburg
Evergreen Audio
Norfolk
Sound Shop
Richmond
Gary's
Roanoke
Lee Hartman & Sons
Springfield
Audio Associates
Virginia Beach
Sound Shop

WASHINGTON
Bellevue
Magnolia Hi Fi
Bellingham
QC Stereo Center
Bremerton
Bremerton Stereo Center
Ellensburg
Stereocraft
Lynnwood
Magnolia Hi Fi
Marysville
Bry's TV
Oak Harbor
QC Stereo Center
Seattle
Definitive Audio
Magnolia Hi Fi
Spokane
Huppin's
Tacoma
Magnolia Hi Fi
Paulson's
Walla Walla
Stereocraft
Yakima
Stereocraft

WEST VIRGINIA
Huntington
Mack & Dave's
Morgantown
Sound Investments
Wheeling
Look & Listen

WISCONSIN
Appleton
American TV of Marquette
Green Bay
Hi Fi Heaven
Madison
American TV of Madison
Manitowoe
Ray's World of Electronics
Marinette
The Sound Seller
Marquette
American TV of Madison
Waulesha
American TV of Waulesha
Wisconsin Rapids
Salon 1

WYOMING
Cheyenne
Electronics Unlimited

CARVER

POWERFUL MUSICAL ACCURATE

American Acoustics Loudspeaker

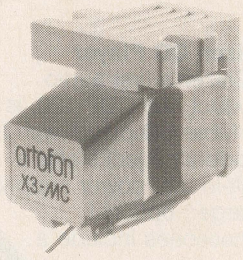
The D8500 is a three-way system featuring a 15-inch woofer, a 5-inch midrange driver with a sealed back, and a 1-inch soft-dome tweeter. Frequency response is specified as 37 Hz to 22 kHz, with sensitivity of 98.5 dB (1 watt, 1 meter) and power-handling of 205 watts rms, 410 watts peak. To minimize diffraction, the cabinet fronts are bevelled and the grille is flush-mounted with a bevelled-edge frame. Price: $489.50 each.
For literature, circle No. 100

conrad-johnson CD Player

The Sonographe SD-1 uses four-times oversampling, digital filtering, and separate D/A converters for each channel. The analog audio circuits include an active final filter using FETs and polypropylene capacitors. Features include programmable play and forward and reverse search. Price: $695.
For literature, circle No. 102

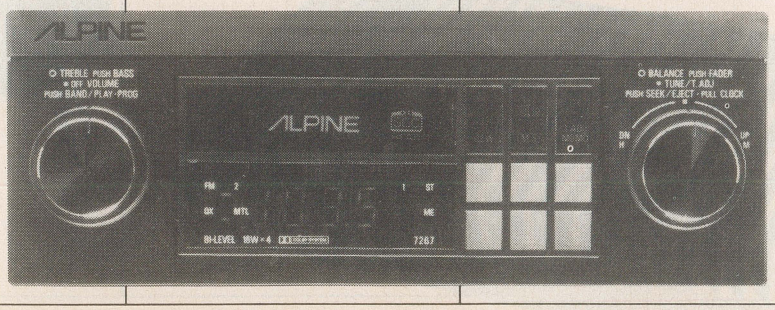
Ortofon MC Cartridges

Ortofon's new line of moving-coil cartridges have prices and output levels comparable to moving-magnet designs. The X-series cartridges use a new samarium cobalt magnet design and a coil of extra-thin (18-μm) copper wire wound by a new automated process. Output is 2.0 mV for 5 cm/S at 1 kHz; recommended tracking force is 2.0 grams, and recommended load impedance is 47 kilohms. Frequency response is 20 Hz to 40 kHz for the fine-line-stylus X3-MC, and 20 Hz to 30 kHz for the elliptical-tipped X1-MC. Prices: X3-MC, $140; X1-MC, $75.
For literature, circle No. 101



Alpine Head Unit

Alpine's 7267 head unit incorporates four power amplifiers, each rated at 8 watts per channel from 40 Hz to 20 kHz at 0.8% THD, as well as preamp-level outputs and faders. The unit has preamp inputs too, allowing the amplifiers to be used with external crossover networks or to amplify an external CD player. The cassette-deck section incorporates Dolby B NR, ignition key-off pause, automatic metal/normal EQ setting, and a music sensor. The tuner section includes 12 station presets, auto seek, and manual local/distant and stereo/mono switches. The tuner's 50-dB quieting sensitivity is 20.7 dBf and its selectivity is 80 dB; the tape deck is rated at 0.06% wow and flutter (wtd. rms), 64-dB S/N with Dolby NR, and frequency response of 30 Hz to 20 kHz, ±3 dB. Price: $480.
For literature, circle No. 103



Meitner Audio Preamplifier

The controls of Meitner's PA-6 preamplifier are not found in the usual place, the front panel. Instead, the switches that select the signal source, tape monitor, muting and phasing, and the pots which control each channel's level, are on a wired remote control. Only control signals pass between the remote and the preamp, so the cables can be extended without affecting the sound. Three user-interchangeable phono circuits are available. Price: $1,650.
For literature, circle No. 104

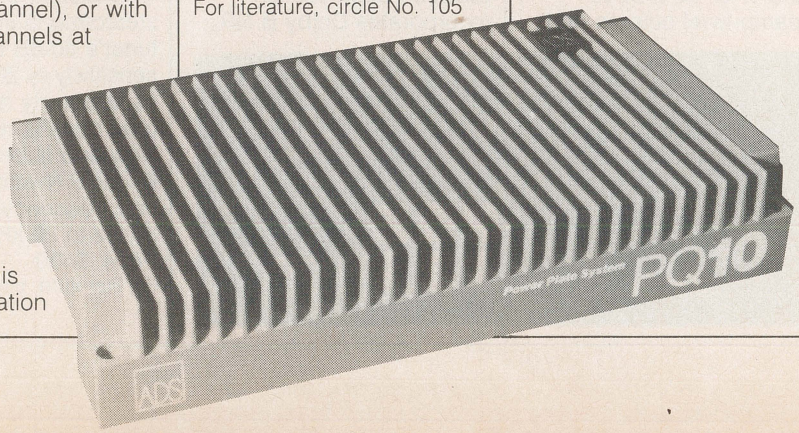
Citizen CD Player

Citizen's first audio product, the CDP-120, is a portable CD player with two headphone jacks and a built-in a.c. power supply/charger; optional accessories include a rechargeable battery pack and a car-battery adaptor.

Available in black or blue, the unit has 16-selection programming and track-number and time displays. If left in pause mode for more than 5 minutes, it will automatically shut off. Price: $249.95.
For literature, circle No. 106

ADS Car-Stereo Amplifier

Flexible in its operation, the PQ10 can be used three ways—as a four-channel amplifier (30 watts per channel into 4 ohms), as a stereo amplifier (80 watts per channel), or with two of its channels at 30 watts each and the other two bridged for 80-watt monophonic output. With an external crossover, this last configuration can be used to power a stereo system with a mono subwoofer. The amp is also rated to handle 2-ohm loads. Dynamic headroom is 2.2 dBA, augmented by soft clipping. Price: $440.
For literature, circle No. 105



Geneva Group CD Album

Storage space designed for LP records is common, but storage for CDs is still in short supply. The Model PF-400 CD Storage Album therefore holds four CD jewel boxes in a 12-inch square designed to fit wherever LPs do. The clear plastic PF-400 has a carrying handle, plus labels which can be used to display the contents of all four discs on the Storage Album's spine. Price: $7.99.
For literature, circle No. 107

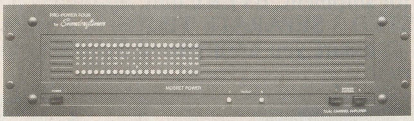
MADE IN U.S.A. *Soundcraftsmen presents... 12 pages of product information...*

1987 BUYERS' GUIDE to SEPARATES

19" RACK-MOUNT AUDIO COMPONENTS FOR THE SERIOUS AUDIOPHILE

A CONDENSED GUIDE LISTING FEATURES, SPECIFICATIONS, SIZES AND PRICES...

Power Amplifiers



PRO-POWER FOUR, MOSFET stereo power amp **300** Continuous RMS Watts per channel @ 4 ohms, 205 Continuous RMS Watts per channel @ 8 ohms, 20–20kHz, **450** Watts RMS @ 2 ohms, **900** Watts RMS @ 4 ohms Bridged. THD < 0.05%, Hum and Noise: –105 dB, Front Panel switching for 2 pair of speaker systems. 40-LED 0–1600 Watt Power Meters.
19"W x 5¼"H x 11"D, 30 lbs **$699**

PRO-POWER THREE MOSFET stereo power amplifier, same as Pro-Power Four, except no 40-LED power meters. 30 lbs. **$599**

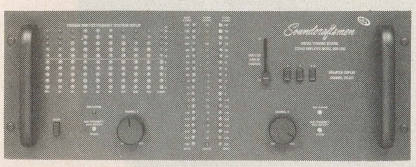
PRO-POWER EIGHT MOSFET stereo power amp. **600** watts per channel continuous RMS power into 4 ohms; 375 watts per channel continuous RMS power into 8 ohms, 20–20,000 Hz with no more than 0.05% THD; 900 watts per channel RMS into 2 ohms; Freq. resp. 20–20,000 Hz ±0.1dB; S/N –105dB; slew rate 50V/m.sec; TIM unmeasurable; IM 0.05%.
19"W x 5¼"H x 16½"D; 67 lbs. **$1,399**

PM840 Power Amplifier, MOSFET stereo, features no-current-limiting power supply, **300** w/p/c RMS into 4 ohms; 450 w/p/c RMS into 2 ohms; 205 w/p/c into 8 ohms @ <0.05% THD; Freq. resp. 20 to 20,000 Hz ±0.1dB; S/N>105dB; slew rate 50 V/microsec; TIM unmeasurable; damping factor 200.
8½"W x 5"H x 12"D; 22 lbs. **$499**

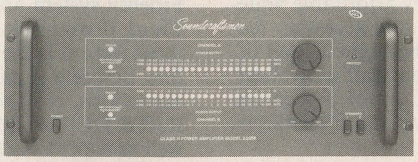
PCX-1, 5¼" x 19" Rack Mount/Cabinet kit, for PM840, shown installed. 11 lbs. **$49**

PCX-2 19" Rack Mounting kit for two PCR800 or PM840's, 2 lbs. **$49**

PCR800 Power Amplifier, MOSFET stereo, **205** watts per channel continuous RMS 20–20,000 Hz into 8 ohms <0.05% THD; TIM unmeasurable; S/N –105dB; 8½"W x 5"H x 12"D; 22 lbs. **$449**

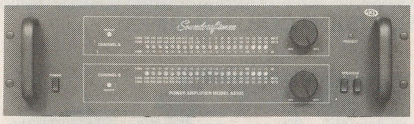


DDR1200 Power Amplifier, with 100-LED frequency spectrum analyzer display. Features Class-H Vari-Portional circuitry; Autobuffer circuitry for continuous 2-ohm operation; 40-LED power output Meters from 0.02 up to 2,000 Watts; Truclip indicators for each ch; Mono Bridging switch on rear panel. TIM <0.02%; 250 W/ch into 8 ohms; **375** W/ch into 4 ohms continuous RMS, 20–20,000 Hz, THD <0.09%.
19"W x 7"H x 12"D; 52 lbs. **$1,199**



A5002 Power Amplifier, Class-H Vari-Proportional circuitry and Autobuffer for continuous operation into 2 ohms. Features auto crowbar protection circuit for output protection without current limiting; 40-LED 0–1,000 Watt power output Meters; Front-Panel switching for 2 pairs of speakers; True Clipping indicators; Input Level controls. Output power 250 W/ch into 8 ohms, **375** W into 4 ohms continuous RMS, 20–20,000 Hz at <0.09% THD; S/N >105 dB; slew rate >50 V/microsec; TIM <0.02%.
19"W x 7"H x 12"D, 50 lbs. **$899**

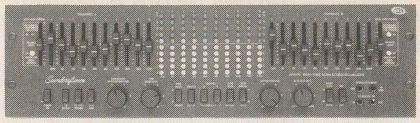
A5001 Power Amplifier, Same as A5002 except no Meters and no Input Level controls. 50 lbs. **$749**



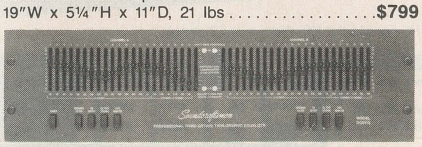
A2502 Power Amplifier, MOSFET stereo with 40-LED 0–500 Watt power Meters. Features Front Panel switching for 2 pairs of speakers; Input Level controls; True Clipping indicators. Output power 125 W/ch into 8 ohms, **190** W/ch into 4 ohms, continuous RMS, 20–20,000 Hz at <0.05% THD; S/N >105 dB; damping factor 200.
19"W x 5¼"H x 10½"D, 30 lbs. **$649**

A2801 Power Amplifier. Same as A2502 except no Meters and no Level Controls, 28 lbs. **$549**

Signal Processors



AE2000 Real Time Analyzer/Equalizer, World's most accurate **(0.1dB)** Real-Time Analyzer/Equalizer. The first and only analyzer with: Two independent real-time analysis systems, (a Direct **100-LED** display with **2dB** readout and a **0.1dB** readout Differential/Comparator.) Pink-noise generator, 10-octave Real-Time Display with Adjustable Decay rate, Mic. preamp, input for analysis for any Signal Processor, Autoscan mode. Center frequencies 32, 64, 125, 250, 500, 1k, 2000, 4,000, 8,000, 16,000 Hz: display accuracy 0.1dB; Auto-Scan sweep rate 0.1–10 secs/octave: Mic. preamp input impedance 2K ohms; Frequency response 20–20,000 Hz ±0.1dB; includes 20-Band all-Passive-Coil Equalizer, with boost/cut range ±15db, max. 22db, 0.1dB Differential/Comparator readout accuracy LED's for instantaneous and precise in/out signal ballancing, THD <0.01%, TIM unmeasurable, Hum and Noise –114dB at full output. EQ Bypass/Defeat, Monitor and Record selectors on front panel.
19"W x 5¼"H x 11"D, 21 lbs **$799**

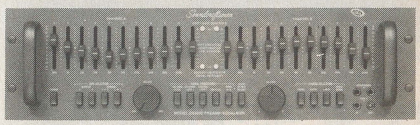


DC4415 Third-Octave Equalizer, stereo with 21 controls/channel. Center frequencies 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1,000, 1,600, 2,500, 4,000, 6,300, 10,000, 16,000 Hz: Features EQ defeat; Infrasonic filter; Tape Monitor and Tape Record; Differential/Comparator® circuitry for Unity Gain setting to within **0.1db** accuracy for highest Dynamic Range capability. THD and IMD 0.01% at 2 V; S/N 114dB at full output; input imp 47,000 ohms.
19"W x 5¼"H x 11"D, 16 lbs. **$599**

DC2215 Differential/Comparator® Equalizer, Stereo 10-band, with Differential/Comparator® True-Unity-Gain circuitry for Input-to-Output balancing accuracy to within **0.1dB.** Equalizer filter circuits use precision wire-wound Passive-Coil inductors for high gain, low noise and distortion. Front panel controls include Tape monitor, LED defeat/EQ defeat and EQ Tape Record. THD and IMD <0.01% at 2 V; S/N ratio 144 db at 10V; boost/cut range ±15 dB, max 22dB. Includes Frequency Spectrum Analyzer Test Record, Computone Charts, Cables.
19"W x 5¼"H x 11"D, 17 lbs. **$399**

DC2214 Differential Comparator Equalizer. Same as DC 2215 except equalizer filter circuits have op-amp synthesized inductors. THD and IMD <0.01% at 2 V; S/N ratio 106 dB at 10 V; boost/cut range ±12 dB, max 18 dB.
19"W x 3½"H x 9"D, 13 lbs. **$299**

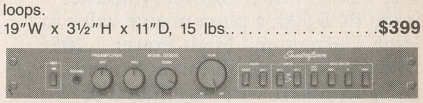
Preamplifiers



DX4200 Preamplifier/Equalizer, with Compact Disc Player and Video/Audio inputs. Phono preamp has Variable Cartrdige Loading (50–800 pF, 100/47,000 ohm); phono level controls for adjustable ±20 dB gain; MC variable reluctance or MM cartridge inputs; 3-way Tape Dubbing; 2 external Signal-Processor Loops; conventional line outputs plus separate Autobridge Line Outputs for Mono Bridging of Most Amps; EQ S/N 114 dB; Passive-Coil filters with 15 dB boost or cut for each octave, max 22 dB; Differential Comparator circuitry for True **0.1 dB** Unity-Gain EQ balancing; includes Frequency Spectrum Analyzer test record and instant reset Computone Charts.
19"W x 5¼"H x 11"D, 20 lbs. **$699**

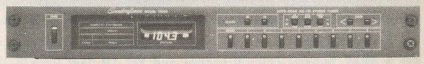
DX4100 Preamplifier/Equalizer, with built-in conventional line outputs plus separate bridging line outputs for mono bridging of most amps. Features 2 external signal-processor loops; 2 phone inputs; 2 tape inputs with 3-way dubbing; phono S/N 97 dB, THD 0.01%; 12 dB EQ boost and cut for each octave, max. 18 dB; Differential/Comparator circuitry for **0.1 dB** Unity Gain; includes Frequency Spectrum Analyzer test record and instant reset Computone charts.
19"W x 5¼"H x 11"D, 19 lbs. **$549**

DX4000 Preamplifier. Same as DX4100 without graphic equalizer but with 3 external signal-processor loops.
19"W x 3½"H x 11"D, 15 lbs. **$399**



DX3000 Preamplifier, Inputs for CD player, Video/Audio, Tuner, Phono, Two Tape Decks with dubbing, Bass and Treble controls, and signal processor loop. THD –0.01%, S/N 95 dB.
19"W x 2⅜"H x 10"D, 10 lbs. **$299**

Tuners



T6200 AM/FM Stereo Digital Tuner Digital quartz PLL tuner with 16 Station presets, 5-digit Station Read-out, Auto-Scan tuning, active High Blend filter. Broad-Band AM switch, 19" rack-mount front panel. IHF sens 1.6 μV; S/N 75 dB; distortion 0.08%.
19"W x 2⅜"H x 12"D, 10 lbs. **$299**

All Prices and Specifications are subject to change without notice.

Soundcraftsmen Inc., **2200 So. Ritchey, Santa Ana, CA 92705 PH: 714-556-6191** ***TELEX/TWX*** **910-595-2524** ***CANADA:*** **E.S. Gould, Montreal, Quebec, H4T1E5**

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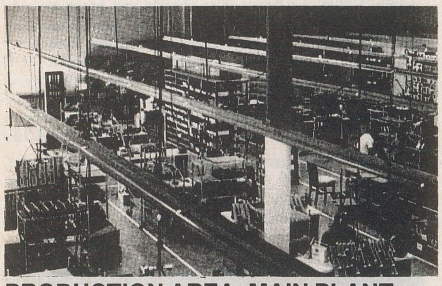
the Soundcraftsmen STORY

Soundcraftsmen Celebrates it's 17th Year of Manufacturing Audio Components for the Discriminating Audiophile... Right Here in Santa Ana, California

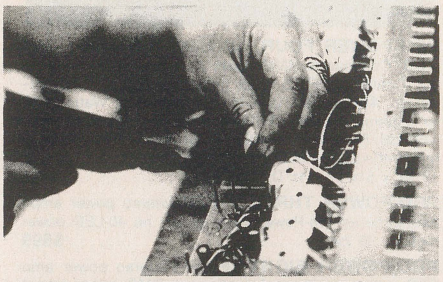
From the introduction of our first Equalizer in 1969, through to our present-day product line of 26 models of U.S. Made Amplifiers, Preamps, Equalizers, and Analyzers, all made right here in Santa Ana, our goal has been to Design and Manufacture very affordable State-of-the Art "SEPARATES," with all of the unique and necessary features that audiophiles demand...and to assure the highest level of performance, 35% of Soundcraftsmen's Production Staff is involved in Quality Control procedures...100% Quality Control is seen on EVERY unit manufactured, and EVERY transistor and EVERY circuit board is put through an individual test.

More Importantly, EVERY completed unit is final Q-C Tested 3 TIMES!...First, EVERY unit is electronically tested for specification accuracy...and Second, EVERY unit is connected to a High Fidelity system and listened to—just like you would at home..and Third, if your unit meets or exceeds the critical standards set forth on these tests, it is then hooked up and tested again on the final packing line, before it is packaged for shipment. EVERY unit, absolutely no exceptions, is FINAL-TESTED 3 SEPARATE TIMES, in 3 SEPARATE DEPARTMENTS, to assure you unsurpassed Reliability as well as superb Performance.

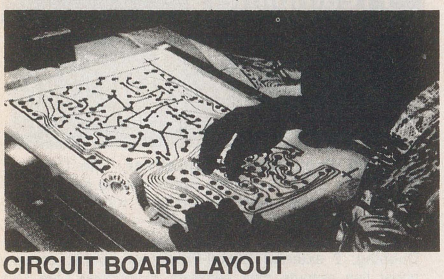


PRODUCTION AREA, MAIN PLANT

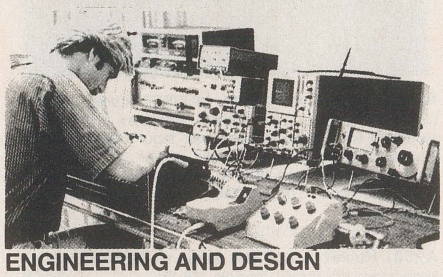
PRECISION COIL-WINDING



HAND-CRAFTED COMPONENTS



CIRCUIT BOARD LAYOUT



ENGINEERING AND DESIGN

QUALITY CONTROL #1

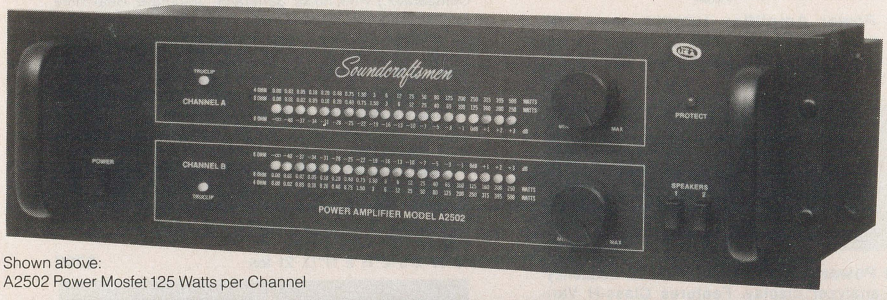
Meet Paul Rolfes, Chief Engineer, V.P., and inventor of Soundcraftsmen's many "FIRSTS" in amplifier technology...

His inventions in electronic power circuitry have resulted in more than a dozen original patents, plus all of the following Audio industry "FIRSTS":

FIRST—with signal-tracking multiple-rail power supplies.
FIRST—with fully electronic automatic resetting crowbar circuitry.
FIRST—with Phase-Control-Regulation power supplies.
FIRST—with automatic low-impedance power supply selection.

The Audio Industry's Most Complete line of Power Amplifiers— 16 Models of Power Mosfet and Class H Amplifiers, from 125 Watts p/c to 375 Watts p/c @ 8 ohms, 20–20kHz, <0.05% THD.

Our newest Power Mosfet Amplifier is the PCR800, a phenomenal value in High-Current and High-Power...205 watts per channel output at 8 ohms, 20Hz to 20kHz with less than 0.05% THD, and with a Performance/Value ratio that is unmatched...a total of 410 watts RMS at 8 ohms, over 600 watts RMS at 4 ohms, and over 900 watts RMS at 2 ohms **$449.00**



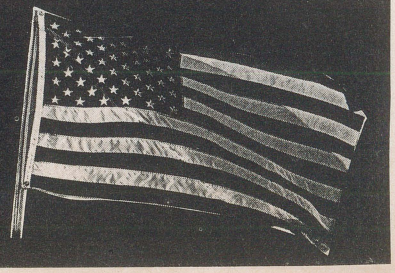
Shown above:
A2502 Power Mosfet 125 Watts per Channel

Yes, rush me the name of my nearest dealer, 1986 Buyer's Guide, and info on FREE 16-page color Brochure and 12" LP Test Record System Evaluation Kit. Mail to Soundcraftsmen, 2200 S. Ritchey, Santa Ana, CA 92705.

Name _____
Address _____
City _____
State _____ Zip _____

FREE!

16-PAGE FULL COLOR BROCHURE, AND $19.95 SYSTEM EVALUATION KIT: 1–12" LP Spectrum Analysis Test Record, 2-sets of Computone Charts, 1-Connector Cable for comparison test, 1-instruction folder for use with your present stereo system. Send coupon for FREE SPECIAL OFFER DETAILS.

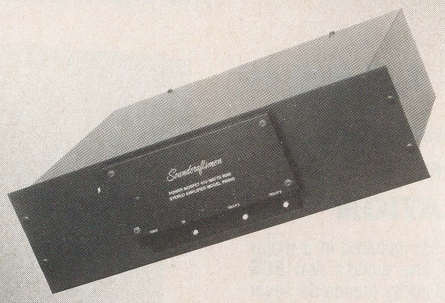


PRO-FORMANCE COUNTS!

MADE IN U.S.A.

Soundcraftsmen

NEW PRO-SYSTEM ONE



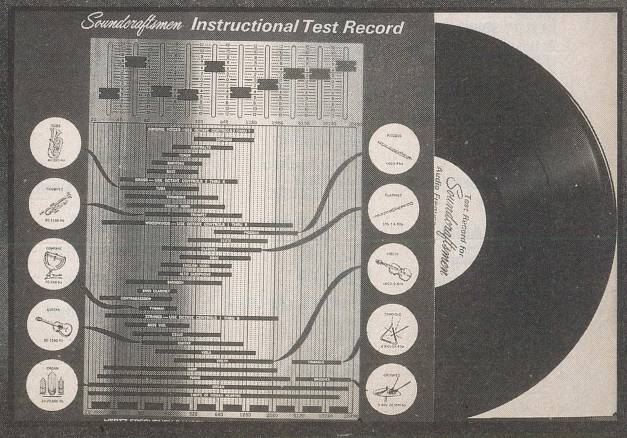
SEPARATES OR SYSTEMS?
Soundcraftsmen is the only manufacturer to give you a choice of Professional quality 19-inch rack mount Separates, a moderately priced high powered System, or a convenient and flexible stack of Separates to match or mix with your present components...

SYSTEM ONE FEATURES
our new PM840 410-watt Power Mosfet amplifier at only 499 dollars, with matching tuner and preamplifier, the total system just over 1,000 dollars at retail!

OUR 19 INCH RACK-MOUNT
Professional separates give you a clear choice of the finest American quality separate components, to add to your present system, or to start a new system. 410-watt amplifiers from 449 dollars, to our 1,399 dollar PM1600, incredibly powerful at 900 watts RMS per channel into 2 ohms, and over 3,000 watts of instantaneous peak reserve power into 2 ohms! The PM840 provides 205 WPC @ 8 ohms, 20 Hz to 20 kHz, less than 0.05 percent THD, and over 1600 watts instantaneous peak reserve power into 2 ohms!

America's Performance-Value Leader in Stereo Component Separates...

You MUST see and HEAR this rib cage-rattling superb audio system, to know how great your music can sound when played through Professional components...Ask your nearest dealer for a CD demonstration on a Soundcraftsmen system, for a full realization of CD's tremendous Dynamic Range and its outstanding contribution to a new dimension in Stereo listening enjoyment.



FREE! **16-PAGE FULL-COLOR BROCHURE, AND $19.95 SYSTEM-EVALUATION KIT: 1-12" LP** Spectrum Analysis Test Record, 2-sets of Computone Charts, 1-Connector Cable for comparison test, 1-instruction folder for use with your present stereo system. **JUST WRITE TO US OR CIRCLE READER SERVICE CARD** for **FREE SPECIAL OFFER DETAILS.**

Soundcraftsmen Inc., 2200 SO. Ritchey, Santa Ana CA 92705 PH: 714-556-6191

BIG POWER FOR YOUR RECEIVER

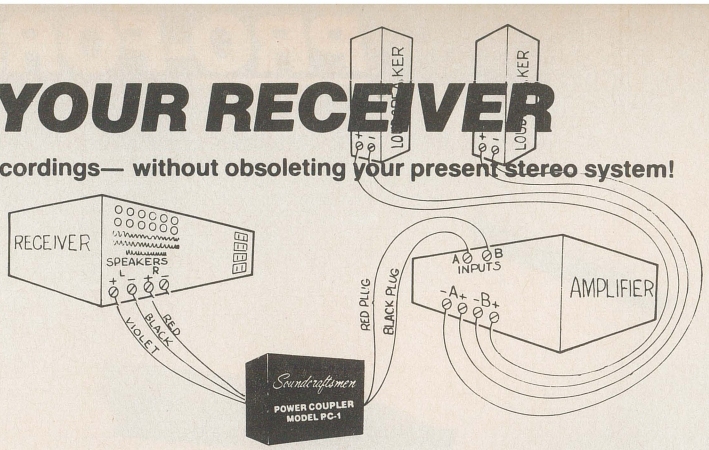
***Add* the power you need for the new digital, dbx or Dolby recordings— without obsoleting your present stereo system!**

PC-1...just $39.00!

Don't sell or trade in your stereo receiver just because you need more power!

The Preamp/Tuner section of your receiver can now be instantly coupled to a Soundcraftsmen high-power amplifier with the amazing new PC-1 Power Coupler.

The PC-1 connects to your receiver (or integrated amplifier) speaker terminals, —perfectly matching the inputs of any Soundcraftsmen amplifier!



THE WORLD'S SMALLEST, LIGHTEST, MOST POWERFUL CONTINUOUS POWER STEREO AMPLIFIER!

410 watts—MOSFET— 205 watts per channel **$449.00**

@ 8 ohms, 20 Hz–20 KHz, less than 0.05% THD...

300 watts per channel @ 4 ohms...

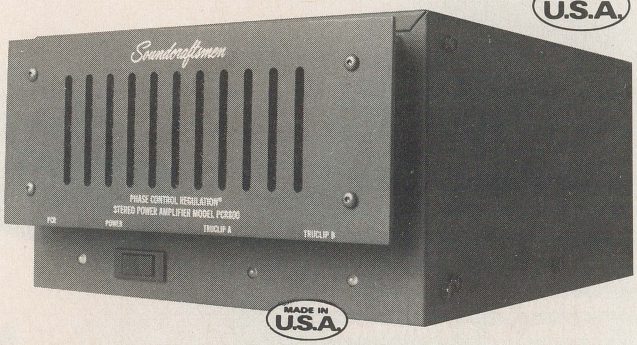
"PHASE–CONTROL–REGULATION"®

Soundcraftsmen's research into **Digital Audio Technology** has resulted in a major advance in amplifier design—**Phase Control Regulation.®** The world's first **PCR** amplifier, the **PCR800,** sets continuous performance and reliability standards never before possible in audiophile equipment.

You must HEAR it, to believe it! The improvement is fantastic!

You'll love it!

MADE IN U.S.A.



MADE IN U.S.A.

FOR A DEMONSTRATION, VISIT NEAREST DEALER LISTED BELOW

However, many additional Dealers—too numerous to list here—are located throughout the U.S. with many models on display. If no dealer is shown near you, or you encounter any difficulty, please phone us at 714-556-6191, ask for our *"Dealer Locator Operator."*

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Wrangel
WRANGEL DRUG

ARIZONA
Glendale
D&G STEREO
Yuma
WAREHOUSE STEREO

NO. CALIFORNIA
Concord
SOUND DISTINCTION
Sacramento
NEAL'S SPEAKERS
Sacramento
LISTEN HERE
San Francisco
LISTENING POST

SO. CALIFORNIA
Cerritos
FEDCO (MEMBERS ONLY)
Costa Mesa
ATLANTIC MUSIC
FEDCO (MEMBERS ONLY)
Goleta
HOUSE OF AUDIO
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FEDCO (MEMBERS ONLY)
San Diego
FEDCO (MEMBERS ONLY)
Torrance
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FEDCO (MEMBERS ONLY)
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STEREO PLUS
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LA MIRAGE
LAS FABRICAS
Naples
STEREO GARAGE
Orlando
AUDIO MART ELECTRONICS
MARKETPLACE ELECTRONICS
St. Augustine
AUDIO DESIGNS
St. Petersburg
THE MUSIC SHOP
West Palm Beach
SOUND SHACK

GEORGIA
Atlanta
AUDIO UNLIMITED
STEREO CITY
STEREO DESIGNS
Augusta
THE STEREO SHOP
Warner Robbins
WORLD HIFI

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Hilo
YAFUSO T.V. APPLIANCE
Honolulu
VIDEO LIFE
Lihue, Kauai
JACK WADA ELECTRONICS
Wailuku, Maui
ADRIAN'S ELECTRONICS

IDAHO
Idaho Falls
PHASE 4 STEREO

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HJS SOUND
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Lexington
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NEW GENERATION
Houma
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MIKE ROSE ENT.
Sunderland
SCIENTIFIC STEREO

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Burton
STEREO VILLAGE
Detroit
PECAR ELECTRONICS
Marquette
AMERICAN TV

MINNESOTA
Duluth
TEAM ELECTRONICS
Litchfield
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DRUCKERS
Morristown, NJ
DRUCKERS
Newark, NJ
MEG RADIO CORP.
New York, NY
CANAL HI FI
New York, NY
LEONARD RADIO
New York, NY
S&S AUDIO
New York, NY
STEREO PLAZA
New York, NY
THE LAST DETAIL
New York, NY
VICMARR STEREO
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DRUCKER
Brooklyn, NY
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LEONARD RADIO
Brooklyn, NY
MAGNA ELECTRONICS

NEW YORK —UPSTATE
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PURCHASE RADIO
Plattsburg
GREAT NORTHERN STEREO
Syracuse
MORRIS ELECTRONICS
SUPERIOR SOUND
Watertown
HAPPY EAR STEREO

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SUNRISE ELECTRONICS
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NORTON STEREO
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DON JONES STEREO
Newberry
THE ELECTRONIC SHOP
Spartanburg
DON JONES CUSTOM STEREO

TENNESSEE
Nashville
AUDIO SYSTEMS

TEXAS
Arlington
SOUND IDEA
Beaumont
BROCK AUDIO
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SOUND VIBRATIONS
El Paso
SOUND ROOM
Fort Worth
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Houston
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SOUND IDEA
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FOLGER'S ENTERTAINMENT

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Bountiful
INKLEY'S
Midvale
INKLEY'S
Salt Lake City
INKLEY'S
St. George
ARROW AUDIO

VERMONT
Brattleboro
SCIENTIFIC STEREO

VIRGIN ISLANDS
St. Thomas, U.S. and British Virgin Islands
ELECTRONICS UNLIMITED

VIRGINIA
Arlington
LERMA AUDIO
Falls Church
AUDIO BUYS
Richmond
GARY'S

WASHINGTON
Olympia
DESCO ELECTRONICS
Yakima
STEREO FIRST

WEST VIRGINIA
Morgantown
THE SOUND POST
Princeton
THE SOUND POST

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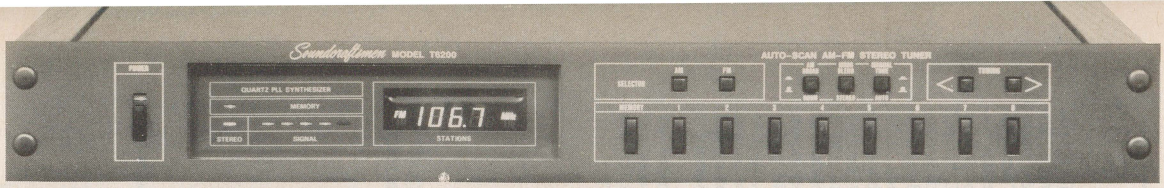
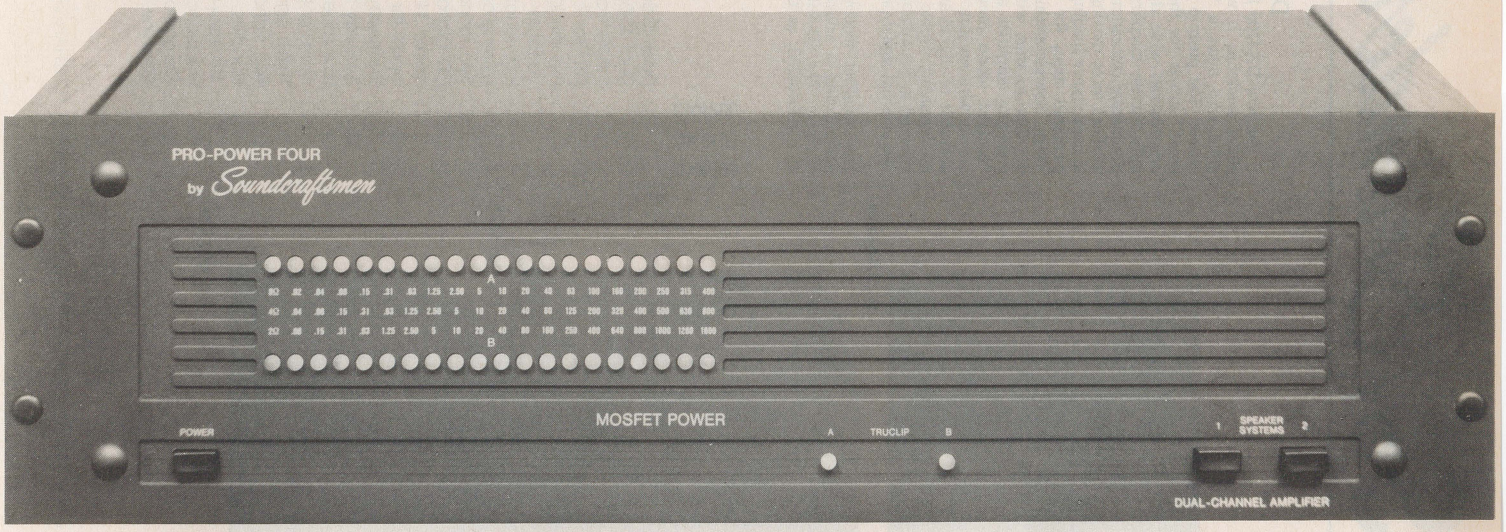
Appleton
AMERICAN TV
Glendale
SOUNDSTAGE
Madison
AMERICAN TV
Oshkosh
AUDIO PLUS
Sheboygan
GENE'S CAMERA & SOUND
Waukesha
AMERICAN TV





"EXPLOSIVE" MOSFET POWER... CLEARLY A BEST BUY

THE NEW Soundcraftsmen (MADE IN U.S.A.) "PRO-POWER FOUR" MOSFET AMPLIFIER IS YOUR BEST BUY, AND HERE ARE A FEW REASONS "WHY":

REASON #1: Dynamic Power to spare, up to 550 watts into 2 ohms.

REASON #2: High Current where it's really needed. 50 Amps per channel available for instantaneous peak output capability of 2500 watts per channel.

REASON #3: Pure tube-like sound...smooth, clean, no "edginess," through the superb—and costly—MOSFET fully-complementary power output stages. You MUST hear this rib-cage-rattling superb new Audio Amplifier...hear the MOSFET difference, so pure it outperforms even the "esoteric," "price-no-object" amplifiers!

REASON #4: Distortion-free performance, typically 0.02% THD and IMD, with TIM unmeasurable. Continuous FTC total power of 410 watts at 8 ohms, 20Hz to 20kHz, 205 watts channel, <0.05% THD.

REASON #5: Precision-Calibrated 40-LED Power Meters, allowing continuous and accurate monitoring of each channel's performance at 2 ohms, 4 ohms, and 8 ohms.

REASON #6: It is guaranteed to improve and enhance your present receiver or Integrated Amplifier, with our $39.00 Power Coupler, the PC1. It enables you to plug in any Soundcraftsmen Amplifier to your existing stereo system, whether Receiver, or Integrated Amplifier.

REASON #7: The Pro-Power Four is an ideal "main component" for up-grading—or starting—a High Powered stereo system. It is capable of fully reproducing, with distortion-free, spine-chilling sonic clarity, all of the demandingly high dynamic peaks inherent in the new Compact Discs and Hi-Fi VCR's.

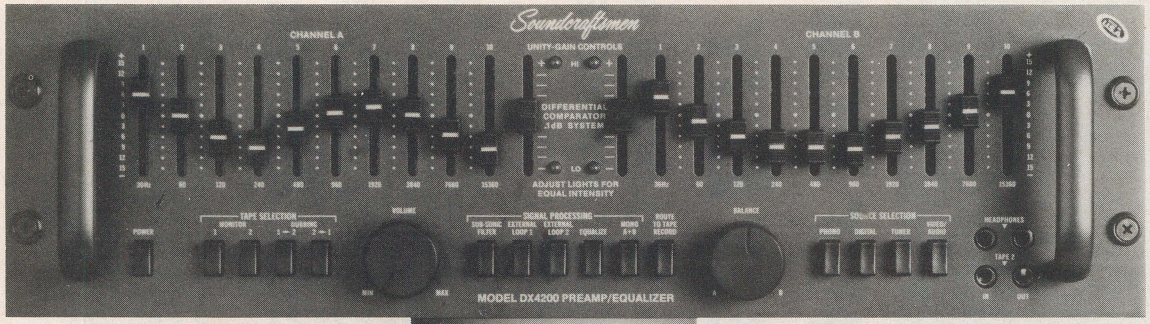
REASON #8: Full-size 19" Rackmount panel with dark charcoal off-black finish, is a standard feature, as shown, with optional hard-wood side panels available.

REASON #9: Speaker System switching, 1, 2, or both...plus the High Current low impedance power to drive Multiple Speaker Hookups in addition to Systems 1 and 2.

REASON #10: It shares the outstanding Performance/Value rating of all 16 Soundcraftsmen Professional and Hi-Fi amplifiers, ALL designed AND manufactured right here in Santa Ana, California. Our 410-watt total FTC continuous power Basic Amplifiers start as low as $449.00, and a complete 410-watt system, including our AM-FM Tuner and Control Center Preamplifier shown above, has a list price of just over $1,000.00.

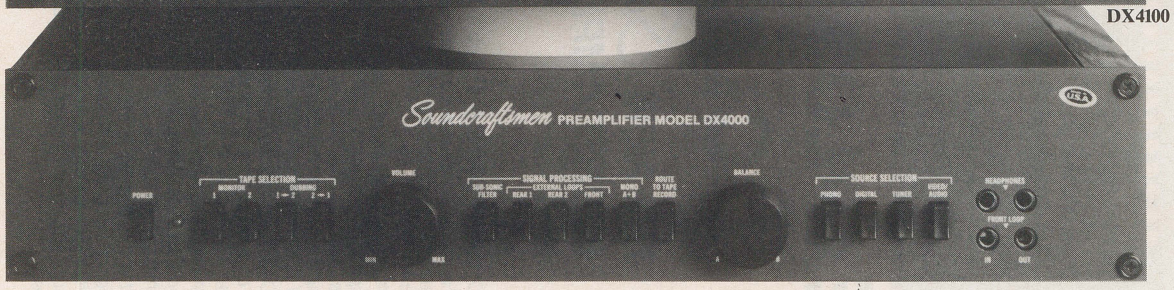
For a FREE 16-page FULL-COLOR, FULL-LINE BROCHURE with the Soundcraftsmen Story, and the Why's and How's of Equalization, plus details on our FREE 12" TEST RECORD offer and name of nearest Dealer, please phone our "Dealer Locator" operator at 714 556-6191—or write to us at 2200 So. Ritchey, Santa Ana, CA 92705. In Canada: Tri-Tel, 105 Sparks Ave., Ontario M2H 2S5.

PRE-AMPLIFIERS by Soundcraftsmen



DX4200 $699.

DX4100 $549.



DX4000 $399.

DX4200 DESCRIPTION

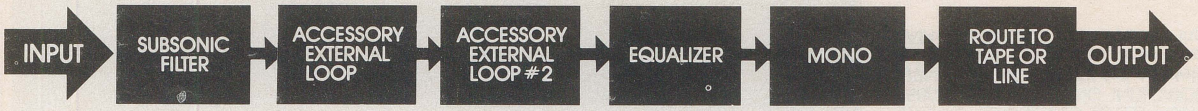
The new DX4200 Preamp/Equalizer is the most versatile preamplifier available. It was designed for the most demanding audiophile who takes a "hands-on" approach to his or her music system. The preamp section includes specially-designed "overload-proof" inputs for the latest CD players, with their potential for unsurpassed wide dynamic range. The phono preamp utilizes fully-discrete circuitry instead of the more common IC "chips," eliminating coloration and making it exceptionally quiet. It accommodates most moving-coil cartridges and even permits adjustment in capacitance loading from 50 picofarads to 800 picofarads, in 50 picofarad steps, for exact matching of virtually any phono cartridge. Soundcraftsmen's exclusive AutoBridge® circuitry permits the user to start with one stereo amplifier, and then to add a matching amplifier at a later date, operating both amplifiers in "bridged mono mode," thereby TRIPLING per-channel power output with no loss in performance. Ideal for meeting the power demands of digital audio. Only the finest available parts, such as the legendary Noble 31-position resistance-loaded volume control, are used in Soundcraftsmen preamps. Three-way tape dubbing and two external signal-processor loops add to the DX4200's versatility.

The equalizer section is identical to the DC2215, described on pages 3 and 4, considered to be the finest octave-band equalizer available. The DX4100 and DX4000 include many of the features of the DX4200, as the comparison chart below indicates.

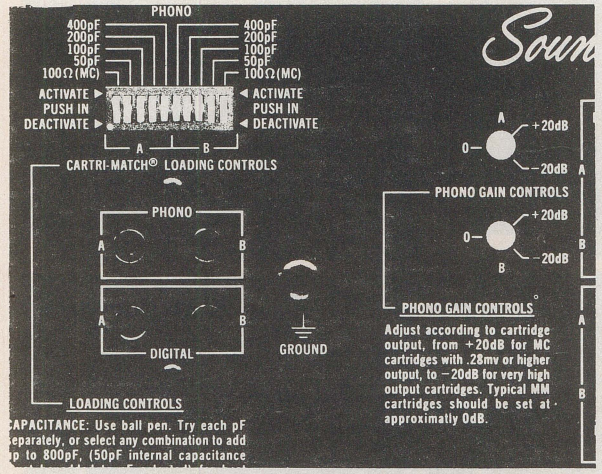
DX4000	DX4100	DX4200	FEATURES
		☐	Dual 10-Band ±15dB equalization.
	☐		Dual 10-Band ±12dB equalization.
	☐	☐	Differential/Comparator® Unity Gain/LED adjustments
☐	☐	☐	Sub-Sonic Filter: –3dB @ 15Hz, 12dB/octave rolloff
☐	☐	☐	Auto/Bridge©
		☐	Variable cartridge loading
		☐	Individual phono input level adjustments
		☐	Moving-coil cartridge inputs
☐	☐	☐	Two mono phono preamplifiers
☐	☐	☐	CD Digital Audio Inputs
☐	☐	☐	Noble 31-position volume control
☐	☐	☐	Inputs for audio portion of video source
☐		☐	Three-way tape dubbing
	☐		Two-way tape dubbing
☐	☐	☐	Low-impedance headphone output jack w/amplifier
☐		☐	Front-Panel tape inputs & outputs
☐			Three signal-processor loops
	☐	☐	Two signal-processor loops
		☐	Handles
☐	☐	☐	19" rack-mount front panel
	☐	☐	Frequency Spectrum Analyzer Test Record
	☐	☐	Computone Charts
☐	☐	☐	Genuine Walnut or Oak side panels available

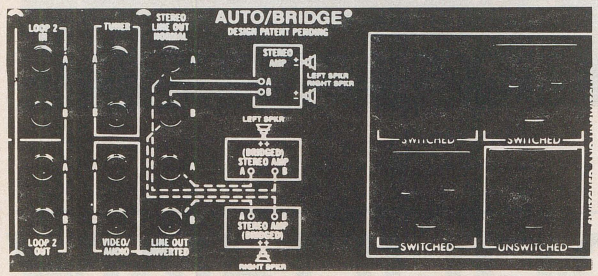
DX4200 SPECIFICATIONS

SIGNAL PROCESSING



Four useful and individually costly components are combined in each Soundcraftsmen Preamp/Equalizer: a Ten-Band Stereo Equalizer, a superb Phono Preamplifier, a versatile Patch-Bay Switching Box and a stereo amplifier Bridging Adaptor. With the growing number of excellent signal-processing devices available, it has become extremely difficult to connect these components to a stereo system and then be able to route any desired combination to loudspeakers and/or tape recorders. With Soundcraftsmen preamps it is as simple as pushing a button! No more cable-switching; add-on devices are permanently connected to the patch-bay section of the preamp. For the serious tape recordist, this one feature can eliminate hours of frustration associated with the interconnecting of add-on specialty components.





CARTRI-MATCH®

Every magnetic phono cartridge is designed to operate optimally only when it "sees" the correct capacitance and impedance loads at the phono preamp. Improper loading results in degraded frequency response and inaccurate reproduction of recorded material. The Soundcraftsmen DX4200 Cartri-Match® permits proper loading of virtually any magnetic phono cartridge, in 50 picofarad increments up to 800 picofarads. We know of no other preamplifier which makes this crucial matching possible. Cartri-Match® also accommodates any moving-coil-type phono cartridge whose output level is at least .28 millivolts, and independent input level controls are included for precise balancing of left and right phono cartridge channels, and to match the phono level to the other program sources.

AutoBridge®

The new Digital Audio Discs have, for the first time, the capability of recreating the dynamic range of a live musical performance. A stereo system's ability to reproduce this tremendous dynamic range ultimately depends upon one thing: the availability of adequate amplifier power. Even if one listens to music at an average listening level requiring only *one watt* of power, *over 300 watts* may be needed to reproduce dynamic "peaks" in the music! Soundcraftsmen has developed an active circuit called AutoBridge® to deal with this problem. AutoBridge® allows the normal connection of a stereo amplifier to a Soundcraftsmen DX-series preamp, with the option of adding a second, identical amplifier at a later date, and operating both stereo amplifiers in "bridged mono mode," one for each channel. Bridged operation *triples* the 8-ohm power per channel of Soundcraftsmen stereo amplifiers with absolutely *no* degradation of any aspect of performance. AutoBridge® assures non-obsolescence no matter how elaborate your music system becomes in the future.

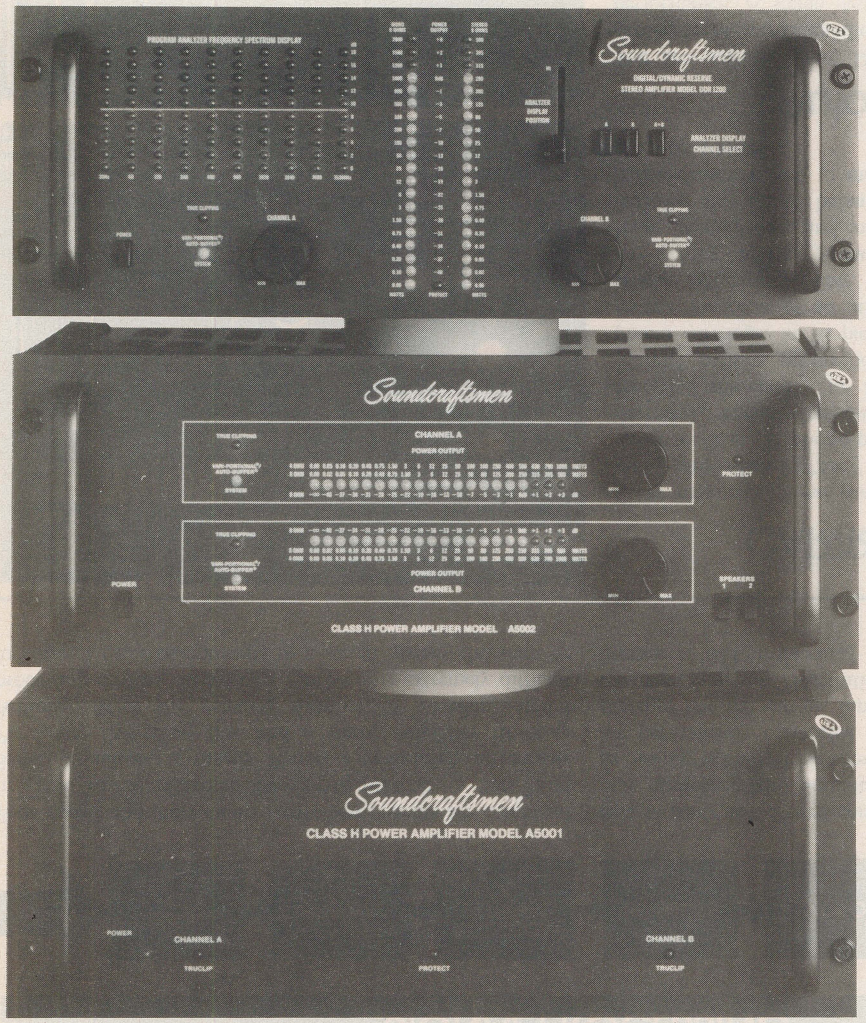
PREAMP SECTION

FREQUENCY RESPONSE: Hi-level ±¼ dB, 5 Hz to 100 kHz Phono ±½ dB, 20 Hz to 20 kHz
TOTAL HARMONIC DISTORTION: .01% at 1 Volt
IM DISTORTION: Less than .01% at 1 Volt
PHONO IMPEDANCE: 47K or 100 Ohms
PHONO SIGNAL-TO-NOISE: 97 dB
PHONO CARTRIDGE SENSITIVITY: Any High Fidelity cartridge 0.28 millivolts or greater output
PHONO PREAMP DESIGN: Two separate mono preamp circuits
PHONO LEVEL ADJUSTMENT: Individual ±20 dB gain controls
HEADPHONE LEVEL: Capable of driving 8 Ohms to 2000 Ohms

EQUALIZER SECTION

IN-OUT MONITORING: Differential/Comparator® circuit with LED's, for 0.1dB accuracy
HARMONIC DISTORTION: Less than .01% at 2 V
IM DISTORTION: Less than .01% at 2 V
SIGNAL-TO-NOISE: 114 dB at 10 V output 100 dB at 2 V output
OCTAVE CONTROLS: ±22 dB boost or cut–each octave (all other octaves set at maximum) ±15 dB boost or cut–each octave (all other octaves set at zero)
GAIN CUT CAPABILITY: +32 dB/−38 dB–all controls maximum
UNITY GAIN CONTROLS: 18dB range
FILTER TYPE: Precision tuned passive wire-wound coil inductors
DIMENSIONS: 5¼" x 19" x 11"
WEIGHT: 23 LBS.
SIDE PANELS: Genuine Oak or Walnut, optional

AMPLIFIERS by Soundcraftsmen



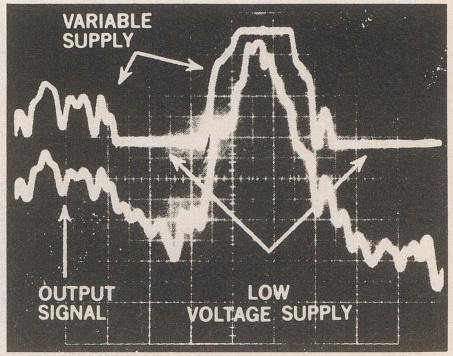
DDR1200 $1199. **A5002 $899.** **A5001 $749.**

CLASS H

Soundcraftsmen's exclusive CLASS H amplifier circuitry establishes a new standard for high-power stereo amplifier technology. Several integral design elements make up CLASS H: the Vari-Portional® dual signal-tracking power supply, Auto-Buffer® and Auto-Crowbar. The Soundcraftsmen DDR1200, A5002 and A5001 amplifiers are CLASS H designs. Here is a brief explanation of CLASS H and its benefits.

VARI-PORTIONAL® SYSTEM: Conventional amplifiers utilize a single power supply which supplies whatever level of voltage is necessary at any given moment to produce the required power output, up to the supply's maximum. This design is inherently inefficient since most of the time the supply is operating at only a small percentage of its potential. This operating condition causes high heat buildup with its related increase in distortion, as well as high wear and tear on amplifier components. The Soundcraftsmen Vari-Portional® system utilizes a low-power supply which operates very efficiently continuously, and a second, "signal-tracking" supply which operates only when actually needed, and only to the degree needed. In this design, no power is wasted in heat dissipation. The amplifier runs cool, distortion is reduced to almost unmeasurable levels, and reliability is dramatically improved. Please see scope photo showing Vari-Portional circuit in action.

AUTO-CROWBAR: The Soundcraftsmen Auto-Crowbar protection circuit is unique among amplifiers. It uses no fuses, relays or circuit breakers. Auto-Crowbar detects any condition which might be harmful to the amplifier or loudspeakers and instantly disconnects all A.C. power to the amplifier. Every few seconds Auto-Crowbar samples the output. If the problem which triggered the Auto-Crowbar has been resolved, the amplifier resumes its normal operation. Conventional current-limiting is *not* used as part of the protective circuitry, as it is in most amplifiers, because current limiting can seriously degrade sound and even damage loudspeakers.



AUTO-BUFFER® SYSTEM: Provides automatic sensing and control of low impedance (2+ ohms) operation. Enables continuous *non-current-limited-output,* without switches or protection-circuit turn off, when driving paralleled speakers and/or low-impedance loads.

CLASS H amplifiers are particularly suitable for playback of Digital program sources because of their unique ability to produce very high power continuously, with huge power reserves available for musical "peaks."

FEATURES

CLASS H CIRCUITRY (all models): Amp runs cooler, no fan needed, through increased efficiency of Vari-Portional® circuitry...**PROGRAM INPUT SPECTRUM ANALYZER DISPLAY (DDR1200):** Graphically displays input program material frequency response, in real-time, for critical adjustments to phono cartridge, tape deck/tape matching, component analyzation...**BRIDGED MODE OPERATION (DDR1200)** Rear-panel switch converts to 750-watts @ 8 ohms mono amplifier. All other Soundcraftsmen amplifiers bridgeable with external adaptor. **CALIBRATED 20-LED POWER OUTPUT METERS (DDR1200, A5002)...INPUT LEVEL CONTROLS (DDR1200, A5002)...TRUE CLIPPING INDICATORS (all models):** Indicate actual onset of waveform distortion...**POWER TURN-ON SURGE DELAY (all models): Eliminates loudspeaker turn-on "thump"...MODULAR CONSTRUCTION (all models):** 16-gauge triple-braced steel chassis with plug-in circuit boards for ease of servicing...**TEST DATA CERTIFICATE (all models):** Individually serialized, signed by final inspector.

PHYSICAL: OUTPUTS: Five-way binding posts (banana type)...**SIZE:** 7" x 19" x 15" deep...**SHIPPING WEIGHT:** 55 pounds...**LINE CORD:** Heavy-duty 3-wire grounded plug...**WARRANTY:** Two years limited warranty, parts and labor...**SIDE PANELS:** Genuine Oak or Walnut, Optional.

GUARANTEED SPECIFICATIONS

POWER Output::
250 watts per channel @ 8 ohms
(20Hz/20kHz, Less than .05% THD)

375 watts per channel @ 4 ohms
750 watts @ 8 ohms Mono Mode
1200 watts Total Dynamic RESERVE

THD and NOISE: Less than .09% (Typically less than .02%)
FREQUENCY RESPONSE: ±0.1dB, 20Hz to 20kHz
SIGNAL-TO-NOISE RATIO: 110dB (a-weighted)
SLEW RATE: 50V per microsecond
STABILITY: Any load 2 ohms or greater
IM DISTORTION: Less than .05%
TIM DISTORTION: Unmeasurable

PROFESSIONAL PRODUCTS by Soundcraftsmen

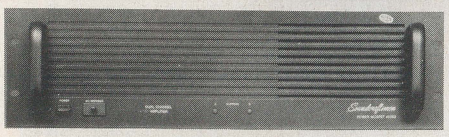
MADE IN U.S.A.

1987 BUYER'S GUIDE TO PRO MODELS

Available for Purchase or Rental only at Pro Audio and Musical Instrument Dealers

A CONDENSED GUIDE LISTING FEATURES, SPECIFICATIONS, SIZES AND PRICES...

Power Amplifiers

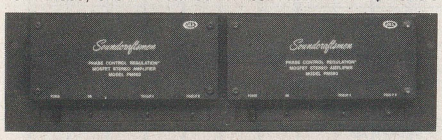


450X2 Power Amplifier, MOSFET Dual Channel, **315** Continuous RMS Watts per channel @ **4** ohms, 210 Continuous RMS Watts per channel @ 8 ohms (1kHz), 450 Watts RMS @ 2 ohms, 900 Watts RMS @ 4 ohms Bridged. THD < 0.05%, Hum and Noise: –105 dB, Rear Panel Level Controls, Bridging Switch. XLR, ¼" Phone and Barrier Strip inputs, Balanced or Unbalanced, Front Panel circuit breaker, True Clipping indicators. Will drive 70-volt lines when bridged, no transformer needed. 19"W X 5¼"H X 11"D, 30 lbs. **$699.00**

450X2M Power Amplifier, same as 450X2, **315** w/p/c @ **4** ohms, plus 40-LED Dual Channel 2, 4, and 8 ohm Precision-Calibrated Power Meters, 31 lbs. **$799.00**

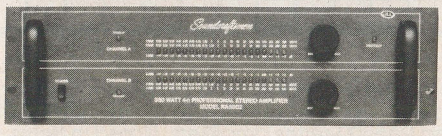
PM860 Power Amplifier, MOSFET Dual Channel, **315** Continuous RMS Watts per channel @ **4** ohms, 210 Continuous RMS Watts per channel @ 8 ohms (1kHz), 450 Watts RMS @ 2 ohms. THD < 0.05%, Hum and Noise: –105 dB, True Clipping indicators. Will drive 70 volt lines when bridged, no transformer needed. 8½"W X 5"H X 14"D, 23 lbs. **$549.00**

PCX-1, 5¼" X 19" Rack Mount/Cabinet kit, for PM860, shown installed. 11 lbs. **$49.00**

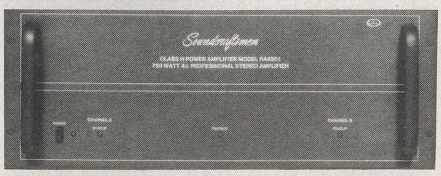


PCX-2, 19" Rack Mounting kit for two PM860's, shown installed, 2 lbs. **$49.00**

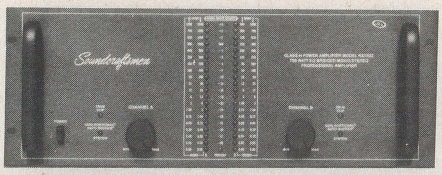
RA5501 Power Amplifier, MOSFET Dual Channel, **210** Continuous RMS Watts per channel @ **4** ohms, 145 Continuous RMS Watts per channel @ 8 ohms (1kHz). THD < 0.05%, Hum and Noise: –105dB, True Clipping indicators. 19"W X 5¼"H X 10½"D, 28 lbs. . . **$549.00**



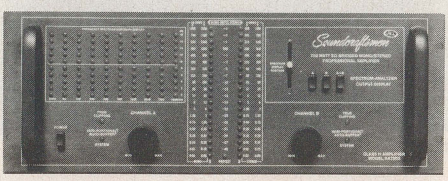
RA5502 Power Amplifier, same as RA5501, **210** w/p/c, plus 40-LED Dual channel 2, 4 and 8 ohm Power Meters and Level Controls, 30 lbs. **$649.00**



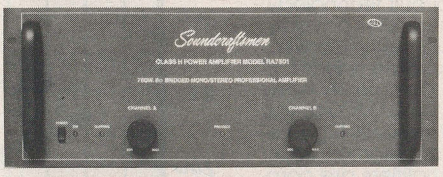
RA6501 Power Amplifier, Class H Signal-Tracking Dual Channel, **420** Continuous RMS Watts per channel @ **4** ohms, 275 Continuous RMS Watts (1kHz) per channel @ 8 ohms. True Clipping indicators, THD < 0.09%, Hum and Noise: –110dB. 19"W X 7"H X 13"D, 50 lbs. . **$799.00**



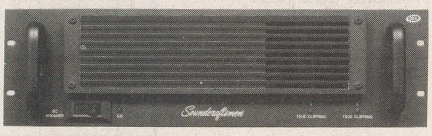
RA7502 Power Amplifier, same as RA6501, **420** w/p/c, plus 40-LED Dual Channel 2, 4 and 8 ohms Precision-Calibrated Power Meters, True Clipping indicators, Level Controls, Selectable Bridging, Bal. or Unbal. inputs. 19"W X 7"H X 13"D, 52 lbs. **$999.00**



RA7503 Power Amplifier, same as RA7502, **420** w/p/c, plus 100-LED Spectrum Bar-Graph display providing performance information for Electronic Crossovers, Equalizers, and other Signal Processors, 53 lbs. . . **$1199.00**

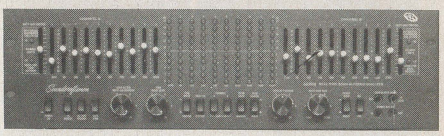


RA7501 Power Amplifier, same as RA7502, **420** w/p/c, without LED power meters, 51 lbs. **$899.00**



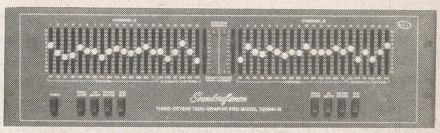
900X2 Power Amplifier, MOSFET Dual Channel, **675** Continuous RMS Watts per channel @ **4** ohms, 375 Continuous RMS Watts per channel @ 8 ohms (1kHz), 900 Watts RMS per channel @ 2 ohms, 1800 Watts RMS @ 4 ohms Mono. THD < 0.09%, Hum and Noise: –105dB. Recessed Level Controls, Rear panel selectable Compressor/Limiter and Mono Bridging switches. XLR, ¼" Phone and Barrier Strip inputs, Balanced or Unbalanced, Front Panel circuit breaker and True Clipping indicators. 19"W X 5¼"H X 16½"D, 69 lbs. **$1499.00**

Signal Processors



AE2000P Real Time Analyzer/Equalizer, World's most accurate **(0.1dB)** Real-Time Analyzer/Equalizer. The first and only analyzer with: Two independent real-time analysis systems, (a Direct 100-LED display with 2dB readout and a 0.1dB readout Differential/Comparator.) Pink-noise generator, 10-octave Real-Time Display with Adjustable Decay rate, Mic. preamp, input for analysis of any Signal Processor, Auto-scan mode. Center frequencies 32, 64, 125, 250, 500, 1k, 2000, 4,000, 8,000, 16,000 Hz: display accuracy 0.1dB; Auto-Scan sweep rate 0.1–10 secs/octave: Mic. preamp input impedance 2K ohms; Frequency response 20–20,000 Hz ±0.1dB; Includes 20-Band all-Passive-Coil Equalizer, with boost/cut range ±16dB, 0.1dB Differential/Comparator readout accuracy LED's for instantaneous and precise in/out signal balancing, THD<0.01%, T/M unmeasurable, Hum and Noise—114dB at full output. EQ Bypass/Defeat, Monitor and Record selectors on front panel. 19"W X 5¼"H X 11"D: 18 lbs. **$799.00**

G2241 20-Band Graphic Equalizer, Dual channel 20-band with exclusive **0.1dB** accuracy Differential/Comparator® true-unity-gain circuitry for precise in/out balancing. Features EQ defeat, Pre-EQ Loop, External Loop. Filter circuits use precision solid-state inductors for high gain, low noise and distortion. Bandwidths one octave on standard ISO centers. THD and IMD < 0.01% at 1V; S/N ratio 114dB at 10V; max boost/cut ± 16dB. 19"W X 3½"H X 9"D; 13 lbs. **$299.00**



TG3044C Third Octave EQ, Two channel, 42 band (21 per channel). Bandwidths are ⅓ octave below 1kHz, ⅔ octave above 1 kHz, Center frequencies 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1,000, 1,600, 2,500, 4,000, 6,300, 10,000, 16,000 Hz, Separate switching for each channel: Sub-Sonic Filter, EQ defeat, Pre-EQ Loop, External Loop input. Exclusive **0.1dB** Differential/Comparator balancing circuits with LED's for instantaneous and precise in/out signal balancing. Balanced or Unbalanced inputs and outputs. 19"W X 5¼"H X 11"D. 16 lbs. **$689.00**

Tuners

T6200 AM/FM Stereo Digital Tuner, Digital quartz PLL tuner with 16 station presets (8 AM and 8 FM), Broad-Band AM switch, 5-digit station readout, Auto Scan tuning and active high blend filter. 19" Rack Mount front panel. IHF Sens 1.6 μV; S/N 75 dB; THD < 0.08%. 19"W X 2⅜"H X 12"D, 12 lbs. **$299.00**

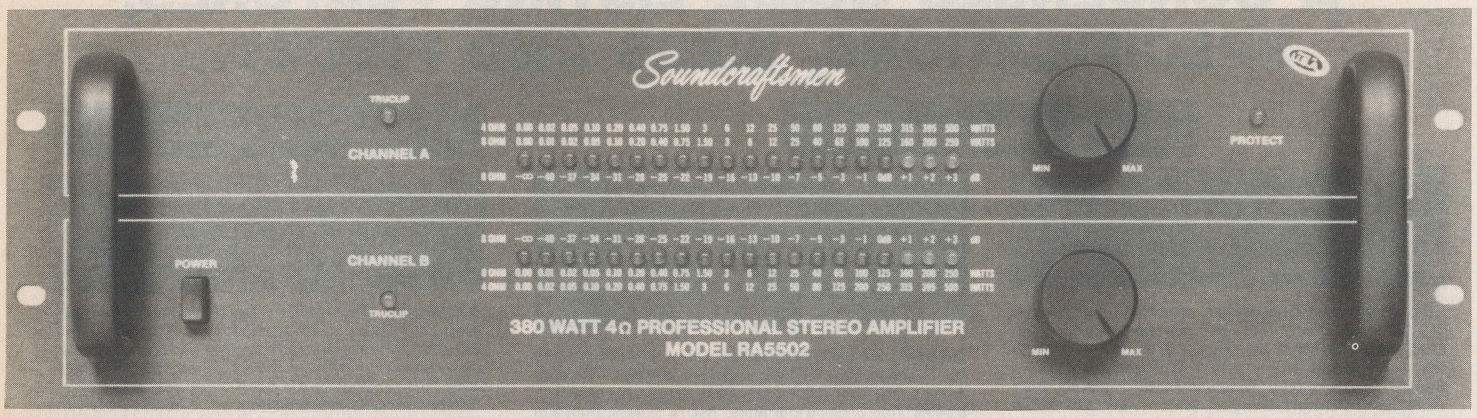
All Prices and Specifications are subject to change without notice.

Soundcraftsmen Inc., 2200 So. Ritchey, Santa Ana, CA 92705 PH: 714-556-6191 *TELEX/TWX* 910-595-2524 *CANADA:* E.S. Gould, Montreal, Quebec, H4T1E5

PROFESSIONAL PRODUCTS by Soundcraftsmen

MADE IN U.S.A.

200 WATTS PER CHANNEL PROFESSIONAL AMPLIFIERS



RA5502: Calibrated LED power meters, input level controls, True Clipping indicators.

RA5501: Basic power amplifier, True Clipping indicators.

DESCRIPTION

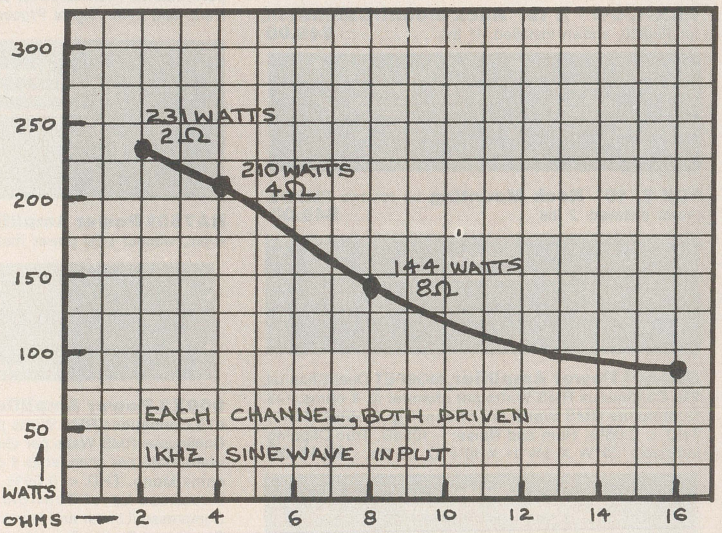
The RA5500 series Professional Stereo Amplifiers represent a major advancement by Soundcraftsmen in the current State-of-the-Amplifier-Art. Through the use of new POWER MOSFET output circuit technology, they offer heretofore unattainable levels of reliability under adverse operating conditions, coupled with unmatched sonic purity. Conventional current-limiting protection circuitry, known to cause many forms of distortion, instability, and even speaker damage, is completely eliminated. The unique new output circuitry designed into the RA5500-series exhibits extremely linear transfer characteristics and superior high frequency capability. This drastically reduces all forms of distortion while providing excellent transient reproduction. All RA amplifiers are compatible with 70V distributed sound systems utilizing external 70V line transformers. For demanding Professional and Commercial applications requiring extreme reliability, moderate to high power, and exceptional sound quality, the RA5500 series offers superb value.

FEATURES

- *• Input Level Controls.
- *• Calibrated LED Power Meters.
- • Continuous 2-ohm operation
- • Direct-coupled circuitry throughout.
- • Modular construction for ease of service
- • 19" x 5¼" rack-mount front panel
- • Heavy duty handles
- • 16-gauge steel wrap-around chassis
- • True-Clipping® indicator LED's
- • Thermal protection circuitry
- • ¼" unbalanced line input jacks
- • 5-way binding post output jacks
- • 3-wire grounded plug A.C. cord
- • Test Data Certificate with Lab measurements, signed by Inspector

* RA5502 Only.

RMS POWER VS. IMPEDANCE

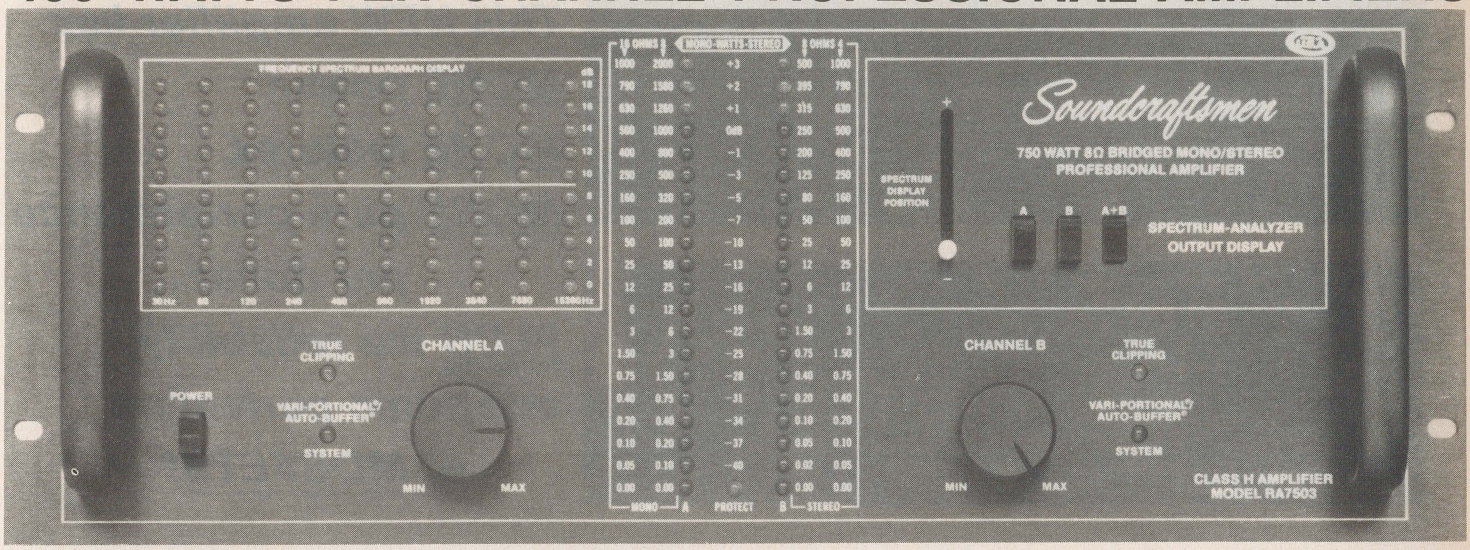


The above power output vs. impedance curves show clearly the enormous power reserves available in the extremely conservatively-rated RA5500-series amplifiers. Stated in terms of "headroom," these amplifiers produce more than 2dB above their rated output, assuring distortion-free performance even with the most dynamic of source material.

PROFESSIONAL PRODUCTS by Soundcraftsmen

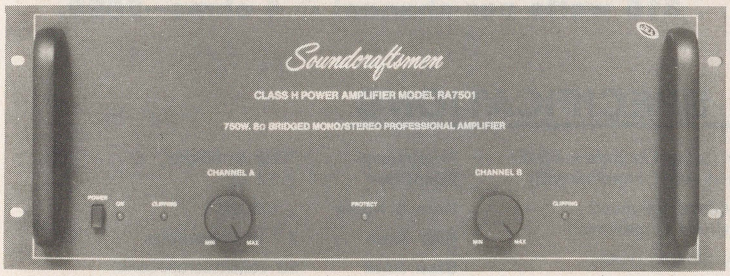
MADE IN U.S.A.

400 WATTS PER CHANNEL PROFESSIONAL AMPLIFIERS

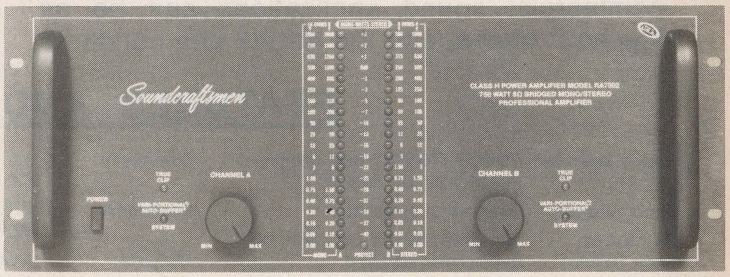


RA7503: Bar-Graph Spectrum Display-shows output in discrete octaves, 2dB steps, and with Pink Noise Test Record supplied provides spectrum performance information for: Electronic Crossovers...Weighted Curves...Component comparison...Equalizers...Signal Processors...etc.

840 WATTS/8 OHMS @ 1 KHz BRIDGED MONO MODE. RUGGED, RELIABLE, AFFORDABLE HIGH POWER



RA7501: Basic Power Amplifier, with Gain controls, True Clipping lights.



RA7502: Same as **RA7503**, but without Bar-Graph Spectrum Display.

DESCRIPTION

The RA 7500 Series of professional amplifiers were designed for extreme reliability under difficult road conditions. Each of the amplifiers has the same specifications, but the operating features vary, depending upon the requirements of the application. The RA 7500 Series is ideal for demanding commercial sound installations where loudspeaker impedances fluctuate down to 2 ohms and where extremely high power output is needed. All RA amplifiers are compatible with 70V distributed sound systems utilizing external 70V line transformers. The professional musician will appreciate the unusually low distortion apparent in the sound of the amplifier.

FEATURES

CLASS "H" CIRCUITRY:
Amp runs cooler, no fan needed, through increased efficiency of the Vari-Portional circuitry.

TRUE CLIPPING INDICATORS :
Fast-attack L.E.D.'s instantaneously show actual wave form distortion.

* **LEVEL CONTROLS:**
Control level from zero to full volume.

POWER TURN-ON SURGE DELAY:
Allows 3-second turn-on delay through triac, for remote switching from mixer, etc.

*DOES NOT APPLY TO RA6501

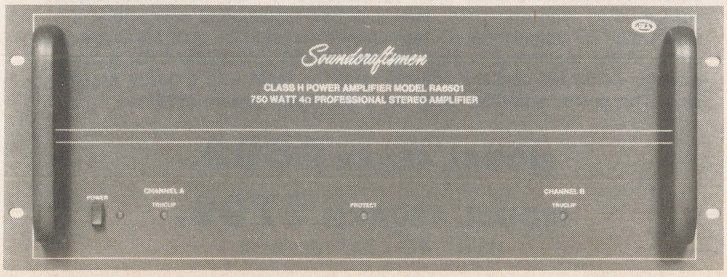
TEST DATA CERTIFICATE:
Individually serialized with Lab Measurements signed by final inspector.

RUGGEDIZED CONSTRUCTION:
16 gauge steel mainframe structure, 3/16" aluminum front panel, black anodized.

MODULAR DESIGN:
Provides easy access to all component parts.

* **STEREO OR BRIDGED MONO OPERATION:**
Rear panel selectable.

* **BALANCED OR UNBALANCED INPUT:**
Selectable, according to type of ¼-inch input plug configuration.



RA6501 DESCRIPTION

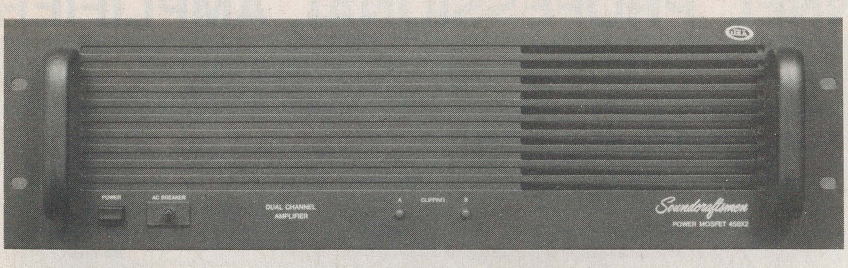
The RA6501 professional amplifier combines the high reliability and performance of the RA7500-Series amplifiers with a "no-frills" approach to basic amplification requirements.

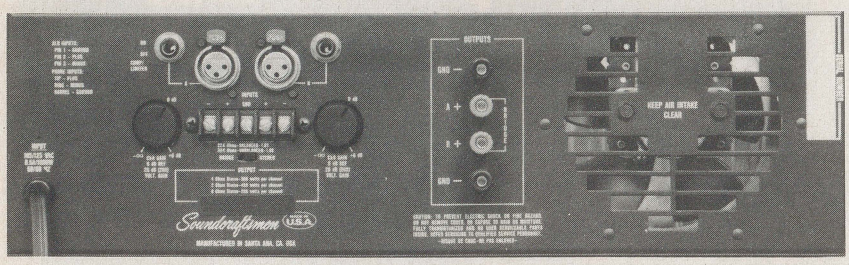
The RA6501 is identical in every way to the RA7501, with the exception of three features that are unneeded in many applications: 1—balance line inputs, 2—mono-bridged mode, 3—input level control. In the many professional and commercial applications where these features are not required, the RA6501 represents an outstanding value at its substantially lower price, while providing all of the rugged road amp performance, superb audio quality, and modular construction serviceability of the higher priced 7500 series amps.

PROFESSIONAL PRODUCTS by Soundcraftsmen

MADE IN U.S.A.

300 WATTS PER CHANNEL PROFESSIONAL AMPLIFIERS





This NEW amplifier has MORE power, MORE features, MORE pure performance per dollar... PLUS the reliability and sonic perfection of MOSFETS!

This new series of power amplifiers was designed for the utmost in reliability and performance even under the most demanding conditions and installations. It is well recognized that the load impedance in many commercial sound applications can be as low as **2 ohms,** and the 450X2 can handle it!

This new **ULTRA-HIGH-CURRENT** design allows the amplifier to perform effortlessly under these most demanding conditions. **MOSFET** output stages offer the utmost in audio clarity and distortion-free reproduction. **315 watts per channel @ 4 ohms—$699.**

FEATURES AND SPECIFICATIONS

Output Devices	***POWER MOSFET*** fully complementary circuit design.
Mono Bridging	Rear panel switchable.
Distributed Lines (mono)	Will drive 70 volt lines with no transformer required.
Protection	Anti-Surge turn on delay Multi-Sensor PCR Thermal protection. Front Panel mounted circuit breaker
Cooling	Forced air, rear to front, utilizing thermal controlled 2-speed fan.
Inputs	XLR, ¼″ phone, and 5-terminal barrier strip.
Sensitivity	1.0 v (Level Controls = +6dB) 2.0 v (Level Controls = 0dB)
Impedance	22K Ohms Balanced 32K Ohms Unbalanced
Outputs	5-way binding posts.
Controls	Rear Panel Gain Controls—∞ to +6dB 0dB Ref = 26dB (20X) Voltage gain
Indicators	True clipping, each channel.
Continuous RMS Power Output (per channel) at 1kHz	2 ohms stereo: 450 watts 4 ohms stereo: 315 watts 8 ohms stereo: 210 watts
Frequency Response	20Hz to 20kHz, ±0.1 dB
Hum & Noise	−105 dB
Rise Time	2.2 microseconds
Slew Rate	50 volts/microsecond
IMD	From 250 Milliwatts to rated output (60Hz–70kHz, 4:1) SMPTE
THD	Less than 0.05%
Size	5¼″H x 19″W x 11¾″D,
Weight	30 pounds

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The power amplifier shall be solid-state with POWER MOSFET output stages. Each channel shall be capable of producing at least **205** watts into **8** ohms or **300** watts into **4** ohms, with both channels driven. The amplifier shall be bridgeable into mono mode through a secure switching device located on the rear panel. The amplifier shall produce at least **600** watts into an **8** ohm load in the mono mode. (Total Harmonic Distortion and I.M. Distortion shall not exceed **0.05%** over a bandwidth of **20Hz to 20kHz** at these power ratings). The amplifier shall have internal protection against possible shorted, mismatched and open circuits. Thermal protection shall be provided by Multi-Sensor Phase Control regulation as well as two-speed fan forced air cooling. Air flow shall be from rear to front. Input sensitivity shall be 1.0V for rated output with adjustable gain capability of 26dB per channel (0dB REF = 20X voltage gain, stereo). Noise level shall be −105dB relative to full output. Rise time shall be 2.2 microseconds and slew rate shall be 50V per microsecond with an 8 ohm load. Damping factor shall be greater than 200 in stereo mode and greater than 100 in mono mode. **The amplifier shall be designed to operate continuously at load impedances as low as 2 ohms.**

Input configuration shall be XLR, Barrier Strip and ¼″ phone, balanced or unbalanced. Internal construction shall be semi-modular to ease field serviceability. The amplifier shall be fitted with a heavy-duty front panel containing AC power switch/circuit breaker, true-clipping indicators for each channel, and carrying handles. Main chassis shall be **14 gage** welded steel. The dimensions shall allow for standard 19″ EIA Rack mounting. It shall be 5¼″ high and 11¾″ deep including input/output connectors. It shall weigh 30 pounds net. Output connectors shall be dual 5-way binding posts. Power requirements shall be 105–125VAC (210–250VAC for export models), 50/60 Hz, and the amplifier shall be fitted with a 3-wire ground plug. **The power amplifier shall be a Soundcraftsmen 450X2.**

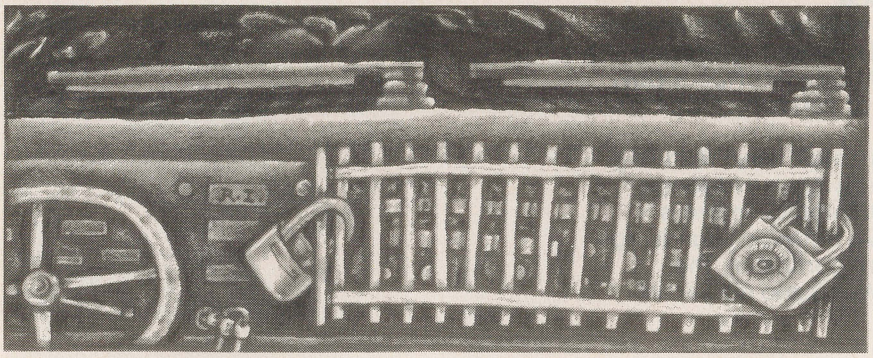
MODEL 450X2 $699.

MODEL 450X2M $799.
(With 40-LED Meters)

PRICES AND/OR SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE • 2200 SO. RITCHEY • SANTA ANA, CA 92705 U.S.A.

IVAN BERGER

STEAL ME, STEAL ME NOT



Illustrations: Rosalind Ivens

The Ins and Outs of Slide-Outs

As I've mentioned before, making car-stereo head units removable only renders them theft-resistant if you remember to remove them when you park. If you don't, someone will eventually come and do it for you.

The thief who takes your slide-out won't leave you with a chewed-up dash, which is some comfort. But he won't leave you with an insurance claim, either—car insurance, as reader Frank Toth of Stratford, Conn. reminds me, normally covers only stereo equipment that's permanently mounted in the car. With a slide-out, the only components permanently mounted are the amplifier, crossovers, and speakers.

Even if you do take your stereo out of the dash, your car may be broken into. An empty dashboard slot won't deter a thief who thinks you probably just hid the stereo beneath the driver's seat; chances are, he'll be right too.

There are measures both owner and manufacturer can take to lower the theft rate. Taking your stereo with you at least limits your loss to the glass of your side window, plus whatever valuables can be found in the car by someone searching for the missing head unit. If you just stick the unit in your trunk, do it around the corner from where you park. A dummy cover for the gaping stereo slot—a panel with dummy gauges, maybe?—might also help; I think I'll try that when I get the slide-out version of my own car's stereo, now in the works.

Manufacturers could help in several ways. First, they could add an alarm that beeps if you don't remove the stereo within a few seconds of shutting the ignition off. You could shut off the alarm by removing the head unit or by pressing a reset switch, in case you were still sitting in the car or had parked it in a safe location. As a second line of defense, manufacturers could make illicitly removed head units unusable, and hence unsalable. In previous columns, I've discussed several which have digital lockouts that disable the unit until a secret code is punched into its station buttons.

In Europe, Blaupunkt has shown a "security cassette" which locks into the tape slot to render the system useless until it's unlocked and removed. The cassette is brightly colored, with luminous flashers, to help thieves get the message from outside the car.

Another method was suggested to me, indirectly, by a manufacturer. He says that customers who have lost their slide-out units are asking him for "bare" replacements—no need to buy another mounting sleeve, and all its hardware, if it's still in the dash.

This suggests that there's also a market for the mounting sleeves alone—a market consisting of those who've purchased purloined head units and have no other way to use them. If manufacturers of slide-out head units refused to sell mounting sleeves to anyone who couldn't prove they owned a matching head unit, the buyers of stolen goods would have no way to benefit from what they bought. (Alas, companies like Bensi, who sell aftermarket sleeves to fit all stereos, would not be able to restrict their sales this way, which might put them at a competitive disadvantage.)

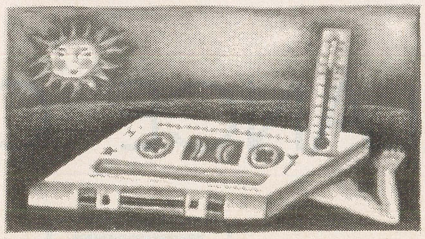
Whatever the method, making a stolen stereo unusable is not enough. It might help if slide-out stereos bore prominent, permanent notice of who their original purchasers were, along with a warning that they could not be used without proper proof of ownership. But that won't do the job until enough stereos are protected against illicit reuse so that no one will bother stealing them anymore. Even if half the stereos in use were protected this way, thieves wouldn't be deterred, but if *most* stereos were not worth stealing, few would be stolen.

Crooks being crooks, they'd probably just shift to new lines of criminal endeavor. Trying to mug karate instructors is what I'd suggest to them.

Smart Shells

Tape manufacturers are beginning to realize that car stereo is operated by drivers. The new Triad tapes and Fuji's GT-I and GT-II have asymmetric shell designs that let you tell side A from side B at a quick glance. Fuji takes the idea a bit further than Triad does, using a concave "A" marker and a convex "B" to help you identify the sides by touch. Both shell designs have ribbing at the corners for a better grip; Fuji's is also ribbed on the top and bottom.

Dashboard temperatures can go as high as 214° F (101.1° C) in cars parked in the sun on a 108° F day, according to Fuji, so the GT shells are rated to withstand up to 230° F (110° C) without deformation. A dual-spring pressure pad and an extra tape guide in the shell are designed to keep the tape properly on track in a vibrating vehicle. And since the car can be a dirtier environment than the home, the leader cleans the tape heads.



Continued on page 88

ANDROMEDA. The need for power is undeniable. But raw power is no measure of a great amplifier. At Sumo, we recognized the need but approached the problem in new ways. Andromeda, for example, is a differential amplifier employing a unique full wave balanced bridge output circuit. This provides impressive statistics as well as awesome performance.

The power is 200 watts RMS per channel into 8 ohms at less than 0.05% THD. There is no current limiting. As a consequence Andromeda is capable of delivering 80 amp peaks at 1 ohm instantaneously.

Music has definition and detail. Sonic texture is smooth and transparent. Bass is tight, mid-range natural, and highs clean. Instrumental timbre is accurate through the top two octaves. Soundstage is wide, instrument placement consistent. The reviews are consistent too. Your Sumo dealer will show them to you.

POLARIS. Polaris takes advantage of the most recent advances in MOSFET technology. These output devices have long held the promise of tubelike performance. But they have in fact typically delivered something less, due primarily to distortion that results from transconductance error. This distortion is heard as harshness or stridency in the high frequency. Polaris eliminates transconductance distortion products by employing a proprietary active bias output circuit. And the absence of protection circuitry introduces no additional distortion. The result. Clean, pure sound.

Polaris generates 100 watts RMS per channel into 8 ohms at less than 0.05% THD. There is no current limiting. The result is a conservatively rated amplifier capable of driving 4 ohms, even 2 ohm loads comfortably.

Audiophile analog pressings reveal new nuances of sound. Compact Digital discs display dynamic range without high end pain. Electrostatic loudspeakers bloom. Dynamic loudspeakers sound tight yet natural. Subwoofers rise to new depths. There is power for the sublest pianissimo and the stickiest perfectionist.

Sumo products are manufactured in the USA. Among the select group of dealers stocking them are:

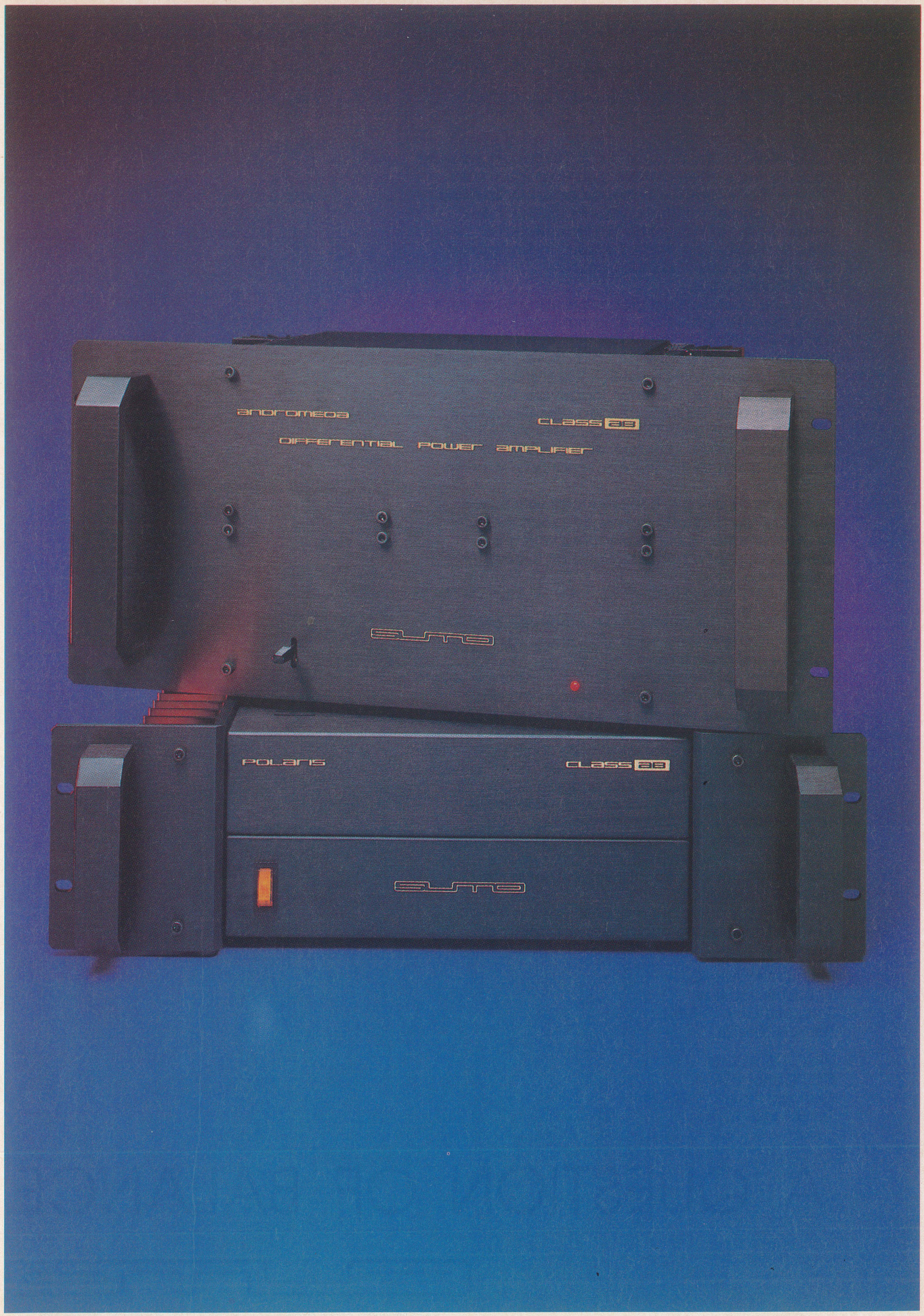
JONAS MILLER SOUND
2336 Santa Monica Blvd.
Santa Monica, CA 90404
Tel. 213 828-5613

MUSICAL IMAGES OF KENTUCKY
11027 Buckeye Trace
Goshen, KY 40026
Tel. 502 228-3200

THE BALANCE OF POWER.

SUMO

SUMO PRODUCTS GROUP, 21300 Superior St., Chatsworth, CA 91311 Tel. 818/407-2427
SUMO CORP. CANADA, 1305 Odlum Drive, Vancouver, B.C. V5L 3M1 Tel. 604/254-5148


andromeda
class AB
DIFFERENTIAL POWER AMPLIFIER
POLARIS
class AB

SAMSON. Reproduction of music's bottom-most frequencies is often a moving experience. It can also be the difference between passively listening to music and emotional involvement. But the reproduction of sub 50 Hz fundamentals is a difficult proposition. And as a result most speakers are more shadow than substance at these frequencies.

Sumo's Samson is a groundbreaking product. It is a subwoofer whose development reflects a genuine understanding of the question. It is built around a 15 inch woofer and a massive 18½ pound magnet assembly. As a result it has the mechanical driving force to be both hair trigger quick and flat to 25 Hz. It also has unparallelled amplifier power. Built in is a dedicated ONE THOUSAND WATT PWM switching amplifier, a revolutionary design that sets new standards for headroom, linearity, efficiency, and speed.

Music, as a result, is reproduced with a new authority. Electrostatic panels add thunder to their air. And emotion is communicated with an immediacy that is surpassed only by the live experience.

DELILAH. The question becomes one of blend. Of integrating a subwoofer smoothly and unobtrusively into a range of acoustic environments. And of doing so in combination with any number of audio components. To this end Sumo introduces Delilah, a 2-way electronic cross-over, and a natural complement to Samson.

Delilah is an expression of both sonic purity and extreme flexibility. It offers a summed mono, as well as stereo bass outputs. It has bridging circuits at each low frequency terminal. And it allows the selection of any of five crossover frequencies.

The result is deep bass without disorientation. More system headroom. Less strain. And the opportunity for emotional involvement in the musical experience.

Sumo products are manufactured in the USA. Among the select group of dealers stocking them are:

BROADWAY MUSIC
27 East Broadway
Salt Lake City, UT 84111
Tel. 801 355-1110

UPSCALE AUDIO
8381 Canoga Ave.
Canoga Park, CA 91304
Tel. 818 882-4600

A QUESTION OF BALANCE.

sumo

SUMO PRODUCTS GROUP, 21300 Superior St., Chatsworth, CA 91311 Tel. 818/407-2427
SUMO CORP. CANADA, 1305 Odlum Drive, Vancouver, B.C. V5L 3M1 Tel. 604/254-5148

POWER
LF LEVEL
LOW PASS
CROSSOVER FREQUENCY
HIGH PASS
LOW PASS SLOPE
12 dB
18dB
BYPASS

OPUS TWO/THREE. The loudspeaker is at the telling end of a complex audio chain. It is here that electrical energy becomes sound. That magnetic energy is translated to mechanical, then to acoustical energy, and music. It is here, more than at any other part of the acoustic chain, that we find the delicate balance of art and science.

Opus Two and Three benefit from an understanding of the overall system as well as fundamental loudspeaker design. They are a careful balance of measurement and extended listening. Of computer modeling and trial and error. Opus Two and Three are not breakthroughs. They are simply stunningly realistic, very musical loudspeakers that will please the most demanding audio purist.

Utilizing common componentry, Opus Two and Three represent visual variations on the same acoustic theme. Opus Two is floor standing. Opus Three is a bookshelf, or standmount, loudspeaker. At the heart of both systems is an extremely quick 6½ inch 3 pound magnet structure. Innovations such as a symmetrical magnetic motor structure and a copper clad pole piece reduce distortions significantly. A composite dome delicately balances the desirable internal damping of the best soft domes with the rigidity found in well designed hard domes. And conjugate crossover design, hard wiring, and by-pass capacitors contribute to a network that integrates the system seamlessly. With exceedingly low group delay.

Solo voices are fixed in space. Orchestras are spread laterally and to the rear of the speakers. And music is smooth and extended. As full range speakers they are most satisfying. In conjunction with Samson, Opus Two and Three rival the best.

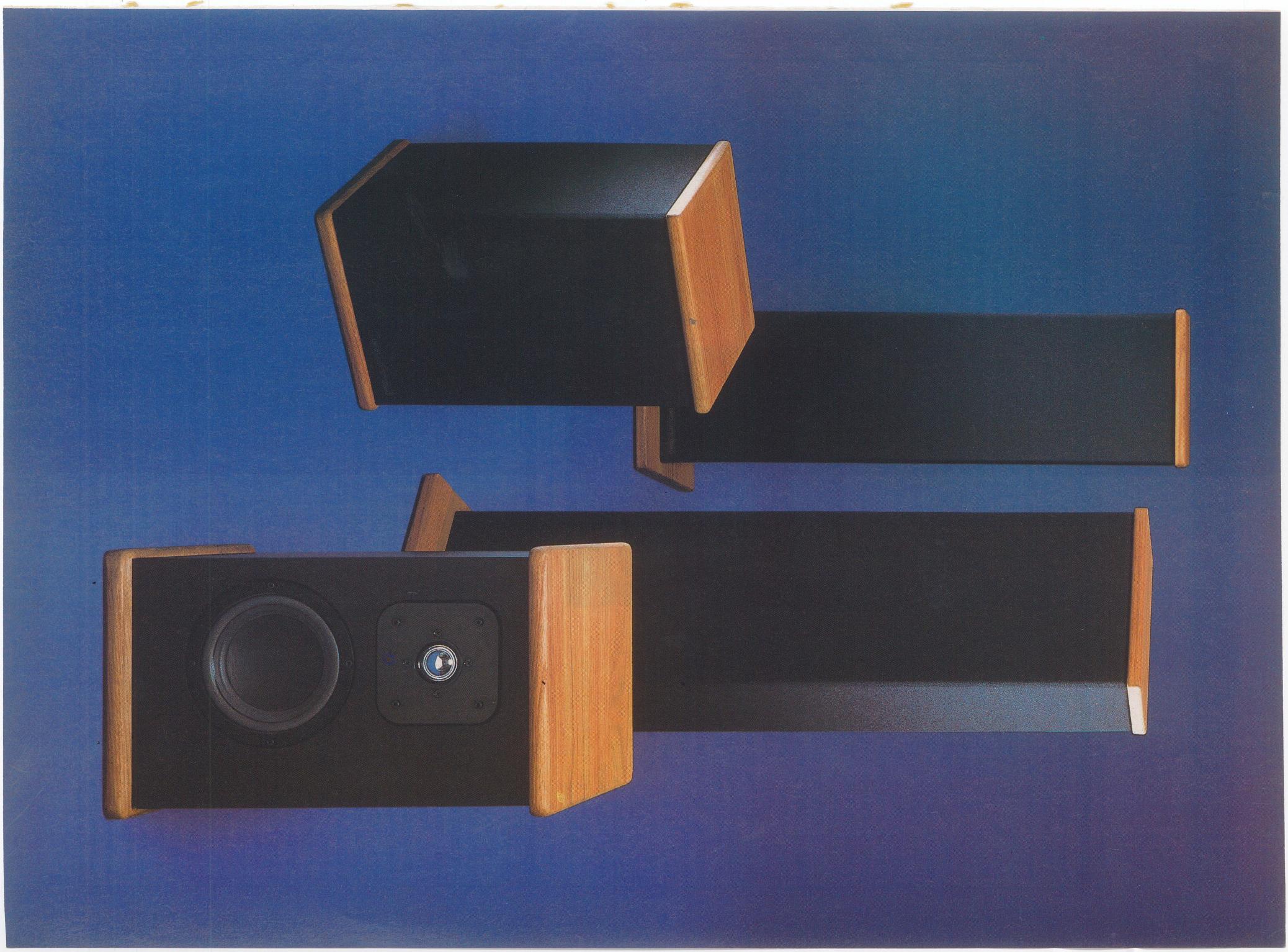
Sumo products are manufactured in the USA. Among the select group of dealers stocking them are:

WAVELENGTH STEREO/VIDEO
635 D South Broadway
Boulder, CO 80303
Tel. 303 777-4449

AUDIO EXCHANGE
621 Hillsborough St.
Raleigh, NC 27603
Tel. 919 828-6369

THE DELICATE BALANCE.

SUMO PRODUCTS GROUP, 21300 Superior St., Chatsworth, CA 91311 Tel. 818/407-2427
SUMO CORP. CANADA, 1305 Odlum Drive, Vancouver, B.C. V5L 3M1 Tel. 604/254-5148



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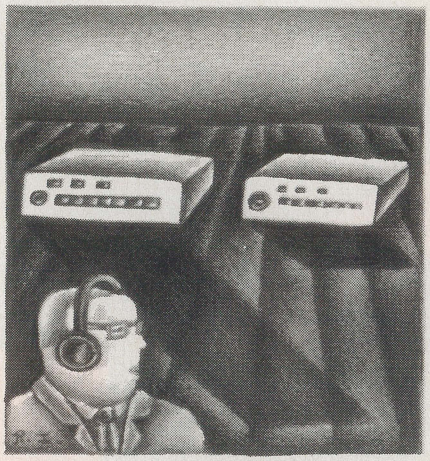
Hype-Power Amplification

Writing ads is the art of dramatic oversimplification. You have a lot to tell, and very little space in which to tell it. So you try to get in, lay enough hints for the audience to flesh out your story for themselves in their minds, and then get out before your readers flip the page.

That, plus common misconceptions about power, is why a car-stereo ad I read recently stated that cutting the product's 30 watts down to a competitor's 20 would "cut [our] full, rich sound by one-third."

Real life is not so simple. No matter how powerful or mild an amp we have, we use its power on a sliding scale. When we set the volume low, hardly any of its power is in use (I've registered average power levels of 1 or 2 watts in home background listening, on speakers of average efficiency). Peaks range above that level, of course; some peaks use 10 times the average power, or more—but very briefly. Other peaks exceed the average by smaller margins, but occur more often.

If you turn the volume up loud enough to use all the amplifier's power all the time, you get nearly constant distortion, so you're likely to turn the volume down again. If you turn the volume up just high enough to handle the music's average levels cleanly, you clip some of the peaks (how many depends on the music, the recording, and your amplifier's headroom). That clipping usually passes too fast to be consciously perceived as distortion, but our subconscious gets tired of mentally cleaning up the sound, and we get "listener fatigue"—the sound seems okay, but we grow tired of listening.



All other aspects of performance being equal, the more powerful the amp and the higher its headroom, the fewer peaks it clips and the louder and longer we can listen before such fatigue sets in. Even discounting headroom, however, there's no linear relationship between power output and our perception of the sound. Cutting power back from 30 watts to 20 will "cut [the] full rich sound," but only by a smidgen—not by one-third. The difference in perceived "richness" would have more to do with our ears' abilities at the slightly lower listening levels we'd select than in the system's actual performance. Cutting back from 300 watts to 200 would have still less effect, by far. And cutting back from 3,000 to 2,000 would probably have no audible effect at all.

I say this as a guy who has about 100 watts of power in his car right now and 300 watts (900 peak) in his home system. Power is nice to have. But the difference is far less perceptible than the ads might lead you to believe.

Car Wars

"For today's California kid, it's the loudest stereo, not the fastest car, that rates prestige on Van Nuys Blvd.," said Reese Haggott, then of Alpine, some years back. Detroit-area car-stereo people refer to the same phenomenon as the "Woodward Ave. effect," after Detroit's one-time favorite drag-racing street. With speed limits lower and more rigidly enforced, and roads more clogged with traffic, it's no wonder that sound has taken speed's place among young status-seekers.

Unfortunately, the emphasis is more on sound volume than sound quality. Big sound is more macho than good sound; it's easier to achieve; and it's a lot easier to demonstrate, especially to distant listeners or to those who only catch a flash of your sound as you zip by. No wonder that the contests held by many car-stereo dealers around the country often go by the name of "Crank 'Em Up."

Not Available

Car stereo doesn't merely have more problems than home stereo; it allows fewer solutions too.

For starters, one of the home listener's favorite signal sources—the phonograph—is simply impractical for use on the road. Even the Finial turntable, which plays LP by laser light (I've heard a working sample, incidentally), probably couldn't cope with a car's bouncing as well as a CD player can. And any turntable is just too big for use in anything smaller than a camper. Open-reel tape and videocassette-based PCM players could probably be made to work in a moving environment. But they're a bit on the large side too.

Space limitations also prevent the use of speakers that work best when pulled away from the wall. (Dipole speakers, however, can be used—some years back I heard a prototype system which used dipole midrange and tweeter drivers on the rear deck.) Corner horns are likewise unlikely prospects for the car, though I hear there's at least one van equipped with Klipschorns.

Headphones are dangerous if the driver wears them. Worn by passengers, however, they might even be a safety factor, letting the driver concentrate on driving, undistracted by the music. Ford now has a van with rear-seat headphone jacks; I'm surprised I haven't yet seen rear-seat speakers with built-in headphone jacks.

Tube electronics? Not as silly as it might sound. Before transistors, all car sound equipment used tubes—some car radios even had all-tube Class-A outputs. The old tube gear worked fine too. The transistor's advantages of low operating voltage, limited heating, compactness and lower power drain, were, however, just what designers of mobile electronics had been praying for, and ICs were better yet.

DESIGNED BETTER TO SOUND BETTER

THE CRITICS AGREE:

HI FI CHOICE "Best Buys" RA820, RA820BX, RA870, RB870

WHAT HI FI? Awards winner 1985, RA840BX

WHAT HI FI? (RA820BX) "Rotel have provided hi-fi enthusiasts and the casual buyer alike with an amplifier to take your breath away. A very deserving award winner (best amplifier, 1986)."

HI FI FOR PLEASURE calls RA820BX "a remarkable little amplifier which shows the competition a clean pair of heels. It's a gem that can only further enhance Rotel's reputation." Their verdict on the RP850 turntable? "Rotel has pulled the rug from under the competition with a good sounding turntable-arm combination offering splendid value for the money."

STEREO REVIEW sums up their test of RA870/RB870 (bridged): "We cannot recall seeing **any** other integrated amplifier that can match its distinctly above-average power-output capacity."

AUDIO MAGAZINE: "Anyone, even the most judgemental of golden-ears, should find the sound reproduction quality of the RC870 (Pre-amp) to be beyond reproach."

GRAND PRIX AWARD 1986
Hi-Fi Product Of The Year:
RA820BX Amplifier
WHAT HI-FI?Magazine

Find out what the excitement is about. It's as easy as visiting your local Rotel dealer for a demonstration.

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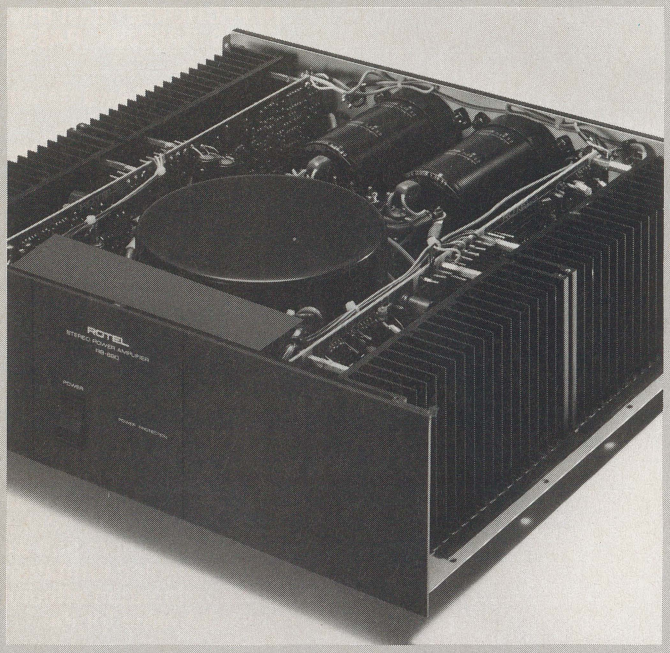
ROTEL hi-fi

The Smart Choice in High-Performance High Fidelity

Rotel hi-fi is an overnight success which was twenty five years in the making. Founded in 1961 as an OEM manufacturer building hi-fi equipment for many of the big names of the day, Rotel has today taken its rightful place among those respected brand names with a top-quality line of high-performance audio components designed for the serious audio enthusiast.



"After our experience with the RB880, we can better appreciate why Rotel products enjoy favour among demanding high-end audiophiles. If the RB880 is a typical example of the company's products, the reputation is well deserved."

Stereo Review April, 1986

Twenty-five years' experience manufacturing audio components shows: since its introduction, the Rotel hi-fi line has won an overwhelming number of awards and accolades from the international audio press, culminating in the selection of the RA820BX amplifier as Hi-Fi Product of the Year (1986) in the prestigious **What Hi-Fi** Awards.

Such immediate acclaim and impact on the marketplace is virtually unheard-of. It is an indication that Rotel's performance-oriented design philosophy is precisely right for today's discerning audio enthusiast.

The Rotel line is designed in Britain to suit that very demanding, purist market. The United Kingdom has spawned some of the audio industry's most famous names — product lines which have led the way in advancing the state of the audio engineering art and science. Today Rotel hi-fi is one of the most successful, sought-after and valued names in the British audio market, and has earned the respect of knowledgeable audio enthusiasts in Europe and America as well.

Critically-Acclaimed Amplifiers

The first components designed to Rotel's very high performance standards were the superb amplifiers. Rotel amplifiers are available in a variety of configurations: power amplifiers (bridgeable for triple the power in monaural mode), pre-amps of the highest quality and refined performance, and integrated amplifiers combining the technology of the separates onto a single chassis for great cost-efficiency.

Each model has since come to be regarded as a performance leader in its price range, easily out-performing even amplifiers costing considerably more.

Technically Speaking

At the heart of each Rotel amplifier is the high-voltage, high-current design. In simplest possible terms, this means Rotel amplifiers will sound much more powerful when driving real loudspeakers than conventional amplifiers of comparable rated power.

Amplifier power ratings are measured under strictly-controlled laboratory conditions, with the amplifier driving a steady-state 8-ohm resistor at a continuous power level. Once connected to loudspeakers and reproducing music, however, the amplifier faces a completely different set of performance conditions:

All loudspeakers are reactive, presenting the amplifier with an impedance which fluctuates as frequency changes, requiring up to twice the power for the same volume level. Similarly, musical transients (short-term "peaks" such as a kick-drum note) may double or triple the power demand for a short period of time. High-voltage and high-current capability are required to cope with these conditions.

Rotel amplifiers are designed to easily handle these real-world demands. Such technical refinements as large power supplies and doubled or tripled output devices give Rotel amplifiers huge power reserves, great control on complex musical passages, and the ability to drive even difficult loudspeaker loads. The difference in performance quality will be truly appreciated with today's advanced digital recordings whose extended dynamic range puts tremendous demand on the amplifier.

MODEL	POWER OUTPUT			PEAK CURRENT
	8 Ohms	4 Ohms	2 Ohms	
RA820BX Integrated Amp (rated 25 W/channel)	52 watts	92 watts	156 watts	20 amps
RA840BX Integrated Amp (rated 40 W/channel)	95 watts	171 watts	256 watts	29 amps
RA870 Integrated Amp RB870 Power Amp (rated 60 W/channel)	100 watts	180 watts	292 watts	30 amps
RB880 Power Amp (rated 100 W/channel)	144 watts	262 watts	362 watts	60 amps
Conventional Amp (rated 60 W/channel)	84 watts	49 watts	25 watts	3.6 amps

Specially-Selected Components

Early in the design process it was determined that design and manufacturing dollars would be spent on those components which directly affect sound quality. For that reason, all electrical components such as resistors, capacitors and transistors are sourced from Europe's finest suppliers and hand-selected to a 1% tolerance for critical circuits (20% tolerances — that is, deviations from stated electrical values — are not uncommon in audio components manufacture). Such attention to close tolerances ensures that all circuits will perform precisely as intended by the design engineer. In addition, components are selected for the lowest possible noise levels, ensuring extremely quiet operation.

Straight-Line Design

Even the world's finest components are necessarily imperfect conductors. As a result, all Rotel amplifiers, tuners and receivers typify a straight-line design approach, eliminating all components from the signal path which are not strictly necessary for performance. This straight-line design is seen most graphically in the removal of "features" and controls which make no contribution to sound quality. It is also evident in direct loudspeaker connections and the absence of conventional protection circuits.

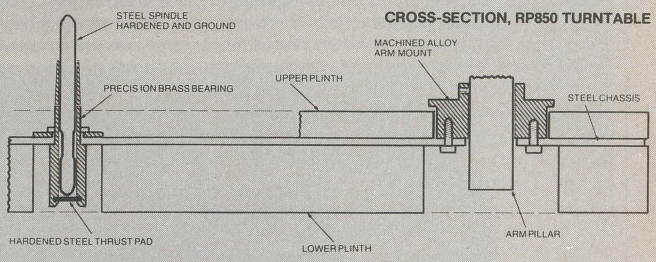
In strictly technical terms, this straight-line design eliminates the potential for phase shift, distortion and signal-loss. In terms of your listening enjoyment, it means a very low noise threshold, improved resolution of low-level details and the most natural, accurate sound reproduction.

System-Building with Rotel hi-fi

"Put simply, the Rotel sounded full, clean, detailed and very dynamic. More than any of the others, the RP830 sounds like an expensive deck."
What Hi-Fi? Turntable Supertest.

Rotel hi-fi is a complete line, including tuners, receivers, compact disc players, cassette decks and turntables, all designed and manufactured to the very high standards set by the Rotel amplifiers. The emphasis on pure, performance-oriented engineering has been the guiding principle in the design of every component in the line. Whether you choose to build a complete Rotel system or upgrade your current system with one or two Rotel components, you are assured of truly outstanding sound reproduction quality.

Rotel's quiet, accurate and supremely musical turntables, for example, illustrate the exhaustive attention to detail which is an integral part of every Rotel design: details like an arm-mount pillar precision machined from a solid piece of aluminum refined specifically to Rotel's high standards; details like a platter mat made of energy-absorbing Norselex, and details like silicone-filled feet to isolate the turntable from external vibrations.



The Balanced Design Concept

In the design of a high fidelity component, as in the selection of a high fidelity sound system, it is ultimately the weakest link in the chain, not the strongest, which sets the limit to the performance achieved.

In recognition of this fact, no single aspect of a Rotel component's design is considered paramount. Instead, each model is engineered for performance quality which is consistently high in all its aspects.

Similarly, all Rotel components are designed to complement each other in terms of sound quality and performance. This consistency has been repeatedly recognised in the selection of complete Rotel systems as top performers in their field by the British audio press. With Rotel hi-fi, the weak links simply do not exist.

Bringing You Back to What It's All About: MUSIC

In the final analysis, of course, the only criterion which truly matters in the design and selection of any audio component is its ability to reproduce music naturally, accurately and convincingly. While some "hi-fi" companies appear to have lost sight of this fact, we remember that you purchase audio components to enjoy your music to the fullest, not to read specifications. This is why the listening room remains our most important laboratory.

We invite you to put Rotel high fidelity components to the test. Visit your local Rotel authorized retailer with your favourite records or compact discs and listen to the music. A simple listening test is the best way to find out why Rotel hi-fi is the smart choice in high-performance high fidelity.

Designed in Britain, Enjoyed World-Wide

BERT WHYTE

SHOWPOURRI

Meridian CD 207 Pro CD player

Last month, I reported on several of the more unusual products introduced at the SCES in Chicago. The sheer number of introductions dictates that I be highly selective in this second part of my product round-up. Without further ado, herewith my report on items which I found interesting and innovative.

As you would expect, there were CD players all over the show, legions of them. The vast majority were garden-variety units of no particular distinction, most being cosmetic variations of the basic CD players made by a handful of giant OEM manufacturers. Fortunately, there *were* several notable advances.

Bob Stuart of Meridian was proudly demonstrating his new CD 207 Pro CD player, which comes in two separate cabinets. The first cabinet contains a newly designed CD transport mechanism and a massive power supply. The motor-driven, front-loading disc drawer has a very heavy front plate and when the drawer is retracted into the player, special mechanical and acoustic isolation systems are activated, virtually sealing the CD off from internal and external vibrations. The second section of the 207 contains all of the decoding electronics, D/A converters, and analog processors and controls. There are also inputs and switching for tuner and tape recorder; these are operated via a remote control, which also operates a new electronic gain control for volume adjustment. This makes possible direct connection of the CD player to Meridian's active powered loudspeakers. The dual D/A converters and analog sections are new, advanced types developed for the Model 207.

Unlike Meridian's original MCD and Pro MCD players, which were highly modified Philips units, the 207 is designed and manufactured by Meridian—although, of course, it still uses the Philips quadruple oversampling system and its associated parts. Bob Stuart was playing the 207 through his newly redesigned M-100 active loudspeakers, and it was providing superbly clean reproduction from both classical and pop CDs. The Meridian CD player is available at a cost of $1,550, including remote control.

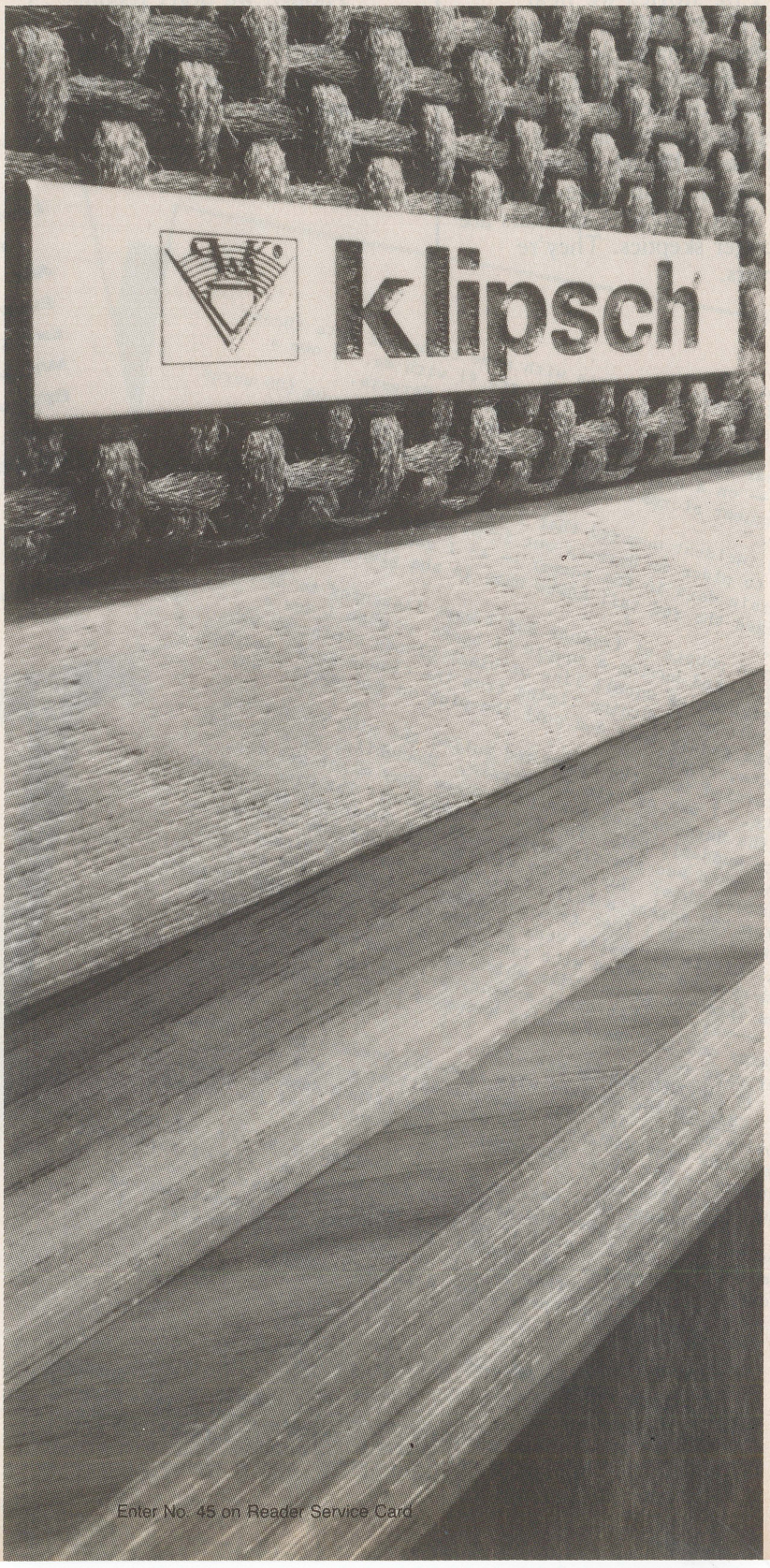
Nakamichi advanced the CD art with Mark II versions of its OMS-7A and OMS-5A CD players, which incorporate some rather innovative circuitry. Most CD players employ sample-and-hold circuits after the D/A converters. It is thought that the FET switches used in these circuits, and the memory and dielectric effects in their storage capacitors, cause digital "noise spikes" and loss of resolution at the −80 to −90 dB level. Nakamichi apparently has developed a special new D/A converter which enables them to completely eliminate the sample-and-hold circuit. This permits direct connection from the output of the converter, through the analog low-pass filter, to the output terminals. Nakamichi claims this approach eliminates the offending noise spikes without a loss of low-level resolution.

Among other improvements in the OMS-7AII and OMS-5AII is the use of six optical photo-couplers to bring digital data to the converter, thus ensuring complete isolation of all digital ground lines from the analog grounding system. Independent power and ground lines are used for display, digital, and servo circuits, as well as for the motor drive and for the conversion and analog sections. All digital circuits are synchronized to a single master clock.

Interestingly, Nakamichi uses quadruple oversampling with high-order, 16-bit digital filtering and dual, 16-bit D/A converters. Apparently, that puts these players among the first to employ the new 16-bit configuration. (As is generally known, Philips has been having problems making the 16-bit version of its quadruple oversampling system, and most other CD-player manufacturers are still using Philips' original 14-bit system.) Nakamichi is also using new discrete, two-stage,

Continued on page 97

What Your Dealer May Not Tell You About Klipsch Loudspeakers.



Enter No. 45 on Reader Service Card

Torture Stories & Other Unsolicited Criticisms About Klipsch Loudspeakers.

The stories we hear about KLIPSCH® Loudspeakers are often remarkable. Some are so remarkable, in fact, that KLIPSCH dealers are reluctant to repeat them to anyone but longtime KLIPSCH owners. You see, people who have spent time with KLIPSCH speakers are no longer skeptics. They're believers.

Though we don't recommend the treatment subjected to KLIPSCH Loudspeakers in some of the letters we receive, we always like to hear from our satisfied customers.

DEAR SIR:

MY NEW CORNWALL II SPEAKERS ARE BY FAR THE FINEST I HAVE EVER HEARD AND EASILY EXCEED MY EXPECTATIONS. I BOUGHT THEM WITHOUT EVER HEARING A PAIR BECAUSE MY DEALER WAS SO FAR AWAY. I'M GLAD I DID. KEEP UP THE GOOD WORK.

ROBERT NIENABER
CINCINNATI, OHIO

Dear Mr. Klipsch,

This is a fan letter of sorts with some technical data thrown in for good measure. Klipsch speakers are #1 with me. I own a pair of Cornwalls and a 1984 pair of wonderful Heresys.

About a year ago, I lived out at Auburn Lake, Wis., on 600 acres of wilderness -- on a huge hilltop my ranch house sat, an easy target for frequent storms. People call the area Wisconsin's "tornado alley."

Well, an incident occured that I thought I should pass on to you. I used to place my Heresys out in my combo-garage-screen porch on certain days in the summer -- so I could listen to music while I watched the red tail hawks hunt in the glen across from my driveway.

One day a couple of friends and I were listening to Jackson Browne on C.D. and having a couple of beers -- when I saw a terribly frightening squall line of black clouds coming my way. There was lots of lightning firing from the clouds so we decided to close the garage door and pull the plug on the music. Why take chances, right?

I scurried into the house and pulled the plug on all the components. I was certain I was safe. Meanwhile, my wife was pulling the Heresys back away from where they might get wet. The storm suddenly hit. Thunder was roaring. The wind blew so hard you could see the air moving. It was downright scary.

Picture this: Just as my wife was pulling the last Heresy back from the screen a bolt of lightning struck a hickory tree that stood about 3 feet from my garage -- BOOM -- the tree split. Little fireballs were rolling on the ground AND because my underground service wire ran right by the tree the charge jumped into the ground wire which was connected to a sewer pipe --well at that exact moment, my wife had the Heresy in her arms and the speaker wire happened to be laying over the sewer pipe --

IT KNOCKED HER ON HER -*?!

CHARRED the speaker wire from the speaker to the components -- blowing my amp, pre-amp, tuner, equalizer -- and the power in the house went KABLOOEY. My wife was struck dumb for about 10 minutes -- but okay, insulated by the wood box of the Heresy. The storm cleared.

The Heresy wire was, as I said, charred up to the terminals on the back. I gave the Heresy up for junk. But out of curiosity, my friends and I hooked it up to a spare amp I have....and....to our astonishment....NO DAMAGE! WHATSOEVER! It sounded just as good as new and to this day, it cranks along with the best. I will never own any speaker but a Klipsch. Ever!

Sincerely,

George Wamser

George Wamser

P.S. My Heresys also accompany me out into the woods on campouts. They play nicely off my car stereo. There's nothing like Vivaldi's "4 Seasons" out on the Minnesota-Canada border waters, under a sky full of stars.

Just a note to let you know how pleased I am with my new Klipsch Forte' speakers. after reading a test in Stereo Review and not getting an answer from your toll free #, I finally found a dealer 90 miles away in Springfield.

These speakers sound great and the oak inclosures are very nice (although I had to pay a local cabinet shop $25 each to cut the bases "square" with the inclosures).

All in all, a truly outstanding product that I am proud to own.

Hats off to your company!

Rick Bess
200 Lynn Street
Washington, Illinois
61571

Dear Mr. Klipsch,

Five years ago we bought four Klipsch HERESYS and installed them in a disco which we were opening. They sounded crystal clear. After we closed from our first night's business, the bar burned.

One partner stood and watched as a Dallas fireman hosed everything down. Later, we removed the speakers from the rubble, connected them to a new system, and they sang.

Later that year, there was a terrible freeze in Dallas and the speakers were sprayed again when pipes burst. They still sang.

Two years later, the bar was closed and the speakers put in storage. During another freeze, they sat in water, again from burst pipes. They remained in storage another year.

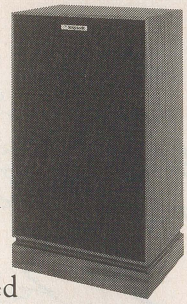
We just took them out of storage and hooked them up. They still sing.

Thank you for a superior product.

Jon L. East
James Spaulding
James K. Bigley
Houston, Texas

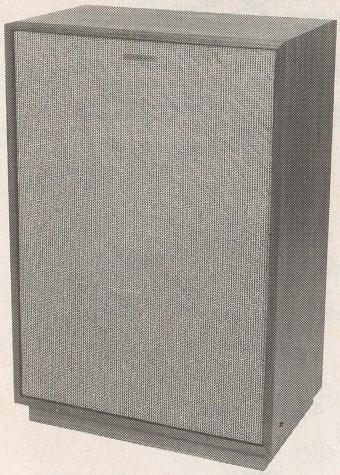
Klipsch Loudspeakers. A Legend In Sound.

kg4®



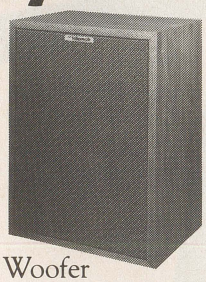
Two-way system with horn-loaded tweeter and dual 8" active woofers. Also has rear-mounted passive radiator lowering bass response to 35 Hz.

cornwall II®



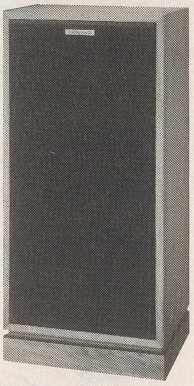
This is a three-way system with a horn-loaded tweeter and midrange and a large 15" woofer operating in a vented enclosure.

heresy II®



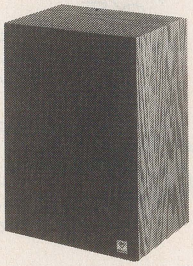
For years, the most popular KLIPSCH model. Three-way system with horn-loaded tweeter and midrange. Woofer is 12" direct radiator in a sealed enclosure. A highly sensitive, very dynamic speaker.

forté®



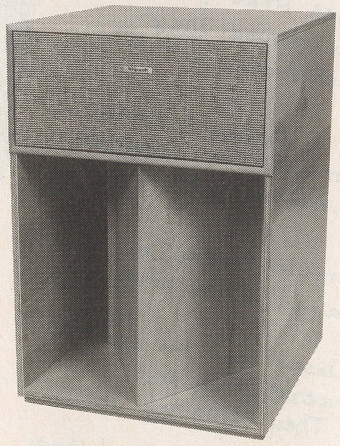
Newest of the KLIPSCH models, the KLIPSCH FORTÉ is a three-way system with a horn- loaded tweeter and midrange. Bass is provided by a 12" woofer and a rear-mounted passive radiator.

kg2®



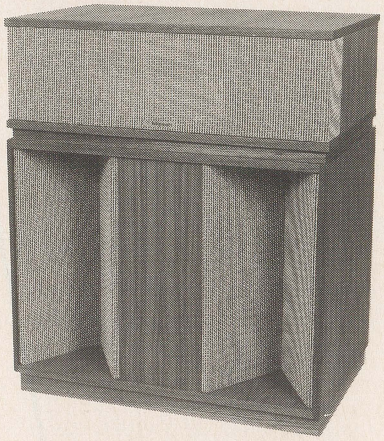
Compact, two-way system. Mounts on floor or shelf, vertically or horizontally. The addition of a rear-mounted passive radiator lowers bass response to 35 Hz.

la scala®



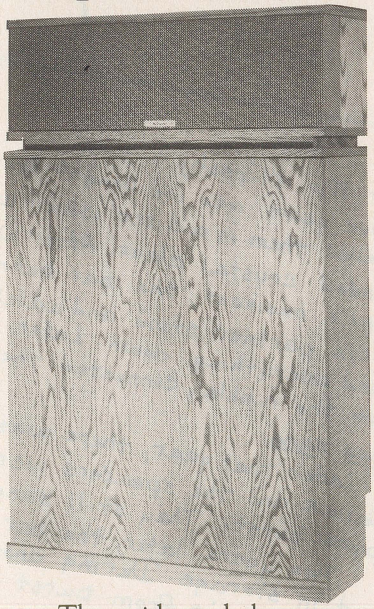
This is a three-way system, fully horn-loaded for highest sensitivity and lowest distortion. It provides listeners with the dynamic sound of the KLIPSCHORN® without requiring corner placement.

belle klipsch®



This system provides essentially the same "sound" as the KLIPSCH LA SCALA in a far more elegant cabinet.

klipschorn®



The pride and the parent of the entire KLIPSCH line, the legendary KLIPSCHORN is fully horn-loaded with a unique folded horn woofer which allows the walls of your room to become part of the speaker itself.

To find your nearest KLIPSCH dealer, look in the Yellow Pages. Or call toll free, 1-800-223-3527.

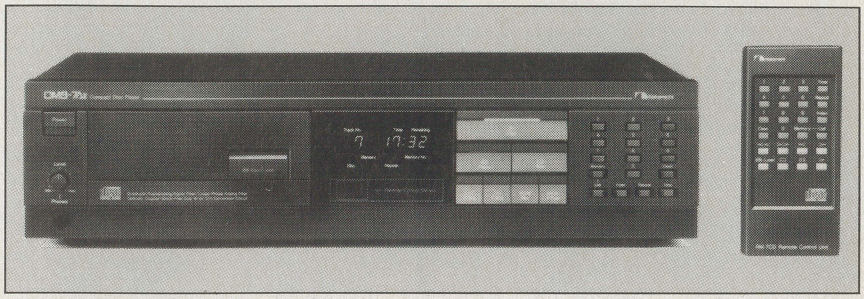
Among the legions of new CD players, most varied only cosmetically, but some manufacturers—such as Nakamichi, Meridian and Spectral—did innovate.

Continued from page 92

third-order Bessel filters following the D/A converters.

These new Nakamichi CD players will be available as you read this, the OMS-7AII (with remote control) priced at $1,650 and the OMS-5AII at $1,375.

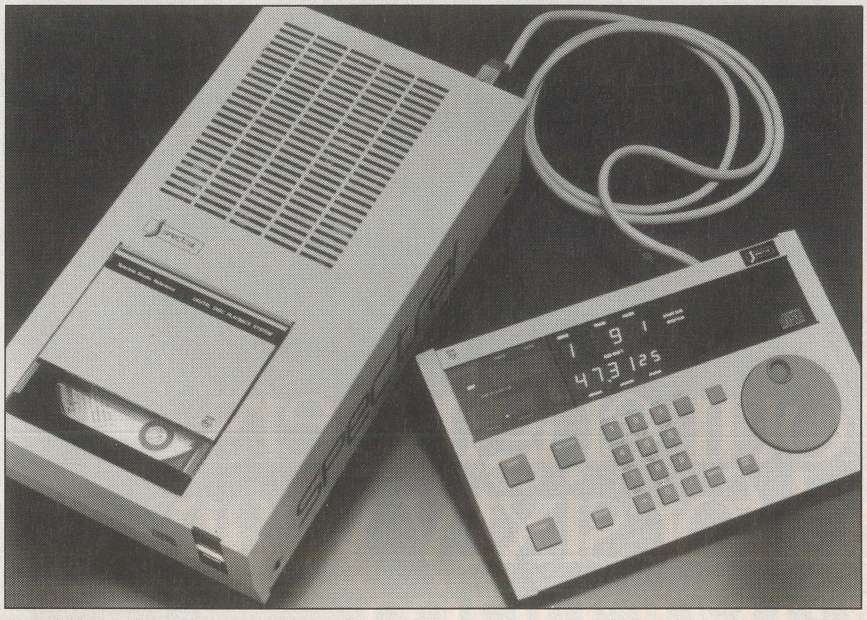
In terms of exotic, specialized CD players, attention must be given to the new Spectral SDR-2000 Studio Reference CD player, another two-piece model. One cabinet houses the Philips Broadcast Professional CD transport. The other cabinet is a card cage holding the electronics, all of which is on standard-sized Eurocards; this permits modular upgrade of digital and analog sections to keep pace with technological advances. Spectral claims to use an improved digital process, with linearizing circuits that give precise number-to-number conversion accuracy and very quick recovery time after transients. Aperture-correction circuits—essentially, phase-compensated equalizers—correct the high-frequency losses that are incurred as audio frequencies approach the sampling frequency. Spectral also emphasizes the very low transient intermodulation levels, and the high isolation between digital and analog sections that is inherent in its design. The SDR-2000 uses a 16-bit version of the Philips quadruple oversampling system.



Nakamichi OMS-7AII CD player

Spectral claims their SDR-2000 meets or exceeds the usual CD performance parameters, and they also specify several parameters not usually found on CD-player spec sheets, such as resolution, transient overshoot and settling time, and sideband suppression. Resolution is listed as 85 µV or less—compared, Spectral says, to 100 µV or more in other top CD players. Transient overshoot, rated at 8% or less in the SDR-2000, is 15% or more in competing players, says the company. Spectral rated their player's transient settling time at 100 µS or less, versus a claimed 500 µS or more in other players. Sidebands were specified as typically 64 dB down, a figure claimed to be 13 dB better than in other players. Needless to say, including so much exotic circuitry in the SDR-2000 makes it a most expensive CD player; it's priced at $5,495.

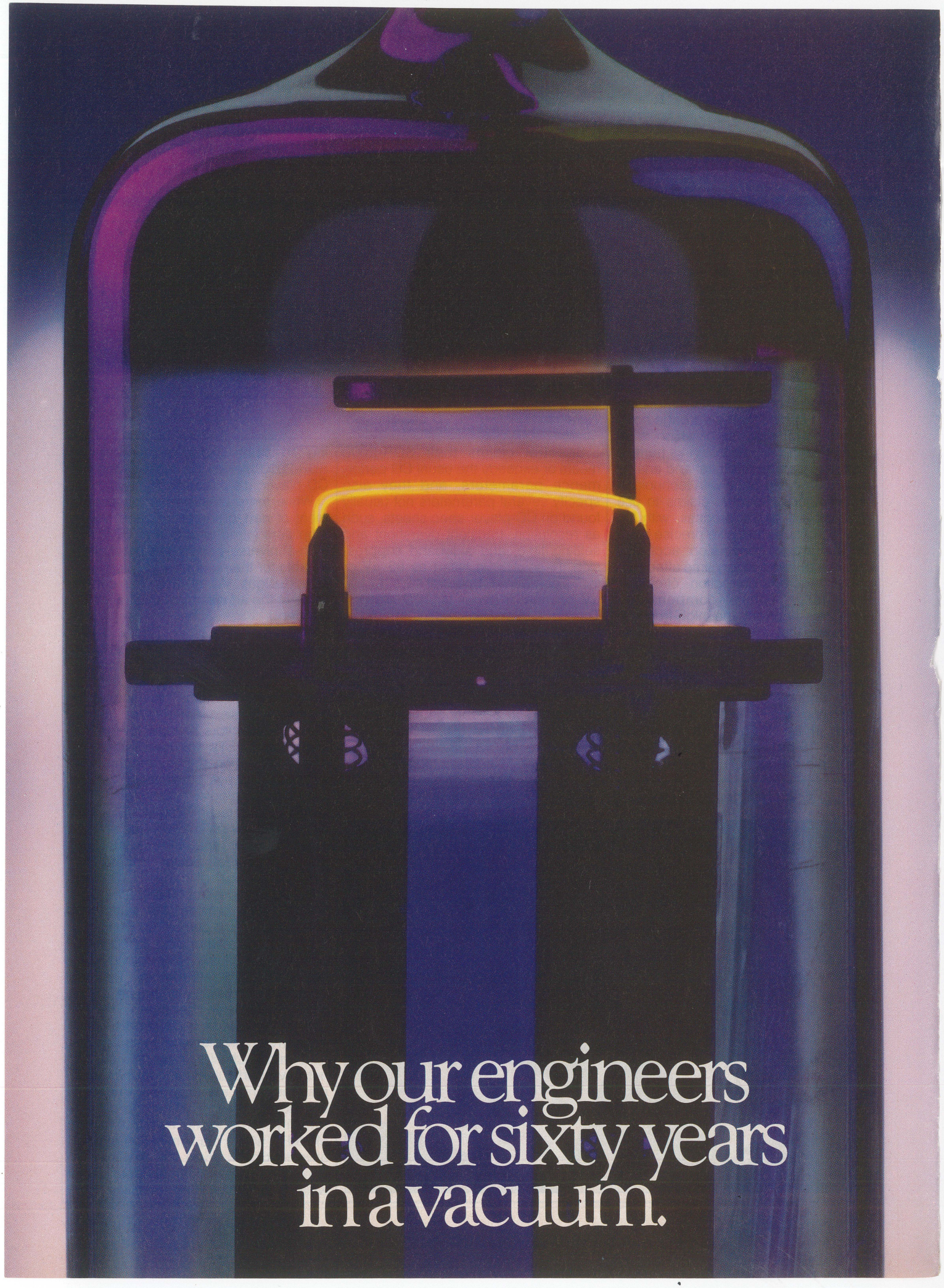
Spectral SDR-2000 Studio Reference CD player



While there usually is a fair assortment of new preamplifiers and power amplifiers introduced at any CES, this 20th-anniversary show was particularly notable for the number and diversity of new designs. As always, the cutting edge of the art was most evident at the high end.

A relative newcomer, Rowland Research of Colorado Springs, has been establishing quite a reputation with its Model 7 monaural power amplifier, a 115-pound behemoth. This handsomely styled unit is a direct-coupled design with no capacitors or inductors in the signal path. FETs are used in all voltage amplification stages, and the driving stage, always powered, drives 28 high-speed bipolar transistors. The Model 7 operates in Class-A/AB output mode. The design is totally free of negative feedback, and utilizes a massive 3.0-kVA toroidal power transformer with 126,000 µF of capacity. Current output is in excess of 60 amperes. The Model 7 can provide 350 watts rms continuous into 8 ohms, 700 watts into 4 ohms, and a whopping 1,200 watts into 2 ohms! All this power comes with less than 0.25% rated IM and THD.

I have been using a prototype pair of Model 7s and consider them to be the best of the ultra-high powered amplifiers currently available. Usually, amplifiers with such high power output do not have particularly smooth high-end response, nor are they very transparent, nor do they exhibit much dimensionality. This does not hold true for the Model 7, where the elimination of negative feedback gives the amplifier an almost tube-like warmth and musicality while maintaining fine detailing and


Why our engineers
worked for sixty years
in a vacuum.

Introducing the world's first hybrid integrated amplifiers.

In an effort to push past the boundaries of conventional amplification technology and design, Luxman engineers took a daring step back, and rediscovered the vacuum tube.

The result–Luxman's LV-105 and LV-103 Brid Amplifiers. Their design is so advanced it took 1985's prestigious "Good Design Award" from the Japanese Ministry of International Trade and Industry. They are the world's first "hybrid" amplifiers–combining the warm, rich sound of vacuum tubes, with the power of transistors.

Indeed, over the years, audio engineers have been searching for a design in amplification that would reproduce that elusive quality of sound called, live performance.

To create such a design, our engineers didn't simply fine tune solid state components, but drew upon Luxman's 60 years of vacuum tube technology and found the 6CG7A Twin Triode tube. A distinction that makes the Brid Amplifiers nothing less than pure listening pleasure.

Examine the inner workings of the Brid design. You'll find Twin Triode tubes perfectly matched with MOSFET high speed semiconductors. Together they form an extraordinary hybrid circuit which delivers sound so clear, so pure and accurate, it's virtually indistinguishable from an original live performance.

Of course the real test, is to turn on a Brid amplifier and hear it perform for yourself.

At once, your ears are treated to smooth and natural, three dimensional sound. You hear the subtleties of instruments. You hear extended highs and lows. And you hear a warmth and fullness of sound that's truly music to the ears.

And to create a complete audio and video performance in your home, the LV-105 incorporates a Professional Grade video amplifier. It improves both TV picture and VCR recording quality. So you get as much pleasure viewing, as you do listening with a Brid.

At Luxman, our engineers took a bold step back to achieve a rare standard of audio/video excellence. Now you can take a remarkable step forward and enhance your listening and viewing pleasure with Luxman's LV-105 and LV-103 Brid Series Amplifiers.

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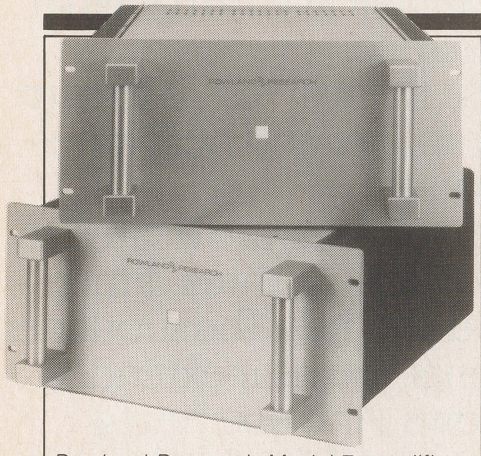
This 20th-anniversary show was notable for the number of new preamps and amplifiers. As usual, the cutting edge was most evident in the high end.



Rowland Research Model 7 amplifiers

definition. Massive, well-delineated bass and awesome dynamic capabilities are major attributes of this amplifier, which never seems to run out of steam, even in the heaviest sustained bass passages. A pair of Series II Model 7 amplifiers sells for $7,500. A Series III is in the works.

Rowland also introduced the new companion Coherence One stereo preamplifier. This too is a direct-coupled design with no negative feedback in any of the circuitry. There is a separate power supply and many unusual design features in this $3,600 unit, including individual optimization of gain and loading for moving-coil cartridges.

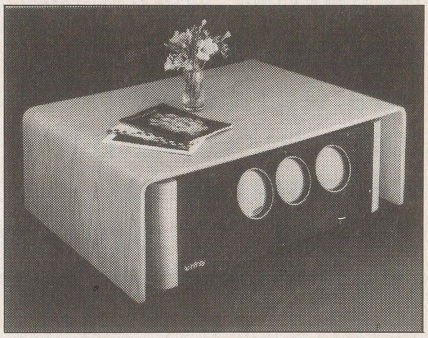
Bill Conrad and Lew Johnson continue to cater to the tube aficionados in the audiophile fraternity. For those who cannot caress their ears with the silky sonics of conrad-johnson's justly famed $2,950 Premier Three preamp, they have introduced a melodious offspring, the new Model PV7. In spite of its modest $695 price, such niceties as metal-film resistors and polypropylene capacitors are used. Plate voltages are supplied by a solid-state regulator and filament supplies are fully regulated. The preamp uses three 12AX7 and two 12AT7 tubes; these provide a phono-stage gain of 40 dB and a line-stage gain of 20 dB. The rated output is 2.5 V and RIAA equalization is flat from 20 Hz to 20 kHz within 0.25 dB. There are inputs for phono, two tape machines (with monitoring), tuner and AUX; there is also a balance control and a stereo volume control said to track within 0.5 dB. A simple, straightforward design, well executed and using good parts, the PV7 is priced low enough for inquisitive audiophiles who want to explore the mystique of "tube sound." They should find this preamp very pleasing.

Other amps and preamps were shown in Chicago, but space will not permit me to give them more than a passing salute. Spectral introduced the DMC-6 preamplifier, a full-function unit with separate power supply and provision for both MM and MC phono cartridges. Spectral has used a new type of high-performance p.c. board developed by Tektronix. In essence, the DMC-6 is a new approach to achieving the qualities of Spectral's well-regarded DMC-10 preamp but at a more affordable $2,295.

Counterpoint showed an elaborate phono equalizer/stereo control unit, the SA-9/11, that features remote control of volume, balance, phase polarity, eight selectable inputs, and tape monitor. Dual-mono construction is used, and the complete system price is $6,000.

Wharfedale is now handling the import and distribution of Beard tube preamps and amplifiers—high-end, Class-A units made in England. Prices range up to $4,700 per pair for monaural, 70-watt-per-channel, Class-A tube amplifiers. Expect to hear more about these Beard units in the future.

In these days of audio/video compatibility (if not yet wedded bliss!), I would be most remiss if I didn't report on the best and most remarkable large-screen projection TV I have ever seen. Of all companies, Infinity has introduced this RSPT (Reference Standard Projection Television) as their entry into the video market. The RSPT



Infinity RSPT

can project a picture measuring 6 to 12 feet diagonally. It employs coated lenses and liquid-cooled tube and lens assemblies. Very wisely, Infinity has included a 178-channel stereo TV tuner, a proprietary surround-sound decoder for Dolby-encoded movies, and a 35-function wireless remote control with on-screen display capability. Two r.f. inputs are provided, plus two sets of direct video and audio inputs, as well as analog RGB and TTL (digital RGB) inputs for computers, etc.

The main thing to note about this Infinity projection system is the picture quality. It is simply stunning, with a resolution of better than 400 lines affording a really sharp picture. The screen brightness, using a high-gain curved screen, is the best I've ever seen. Most important, unlike most projection TV pictures which are rather flat and dull, the picture has good contrast, excellent clean blacks and whites, and colors that are well saturated, vivid, and brilliantly alive. The total impact of several Dolby-encoded movies played on this super projector, plus Infinity's IRS sound system, was breathtaking. At $5,500, the RSPT is certain to win new converts.

Counterpoint SA-9/11 phono equalizer/stereo control unit

How to carry a 100-Watt* MOS FET Receiver, a Dolby HX Pro Cassette Deck, and an anti-resonant Compact Disc Player around the house.

KYOCERA

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This tiny sensor from Kyocera puts high-end audio in any room.

The finer your audio system, the more you should enjoy it. So why confine your listening pleasure to just one room?

Imagine having beautiful music throughout your house. In the bedroom as you get dressed. In the family room as you relax. In the living room as you entertain. Now imagine all this music coming from a single audio system of consummate fidelity.

Not long ago, this kind of flexibility was just a dream. It would have taken several separate hi-fi systems to accomplish this feat—with tremendous expense and duplication of components. But the tiny remote sensor of Kyocera's new Full System Remote Control network has changed all that. For the cost of separate systems of marginal quality, you can assemble a single Kyocera system of audiophile quality—and enjoy that system in several rooms.

THIS IS HOW IT'S DONE.

The heart of Kyocera Full System Remote Control is the RC-101 Infrared Remote Control Center. It receives commands from the RT-102 Infrared Hand-Held Remote Controller. And it sends remote commands to the Receiver, Cassette Deck and Compact Disc Player. Just take a look at what you can do by remote control:

RECEIVER: ***Volume Up/Down; input selection—Phono, Tuner, and CD/Aux; Tape Monitor; FM/AM selection; Memory Preset stations; and Tuning Up/Down plus a special Audio Mute function.***

CASSETTE DECK: ***Play, Stop, Fast Forward, Rewind, Pause and Record.***

COMPACT DISC PLAYER: ***Play, Stop, Pause, Skip Forward and Skip Back.***

Perhaps more important, the Control Center features inputs for Kyocera's tiny RS-103 Table-Top Sensor and inconspicuous RS-203 Wall-Mount Sensor. They enable you to control the system from the next room, from upstairs, from anywhere in the house. By adding speakers, you can bring music into several rooms. While most remote systems operate in only one room, Kyocera's multi-room network is far more advanced.

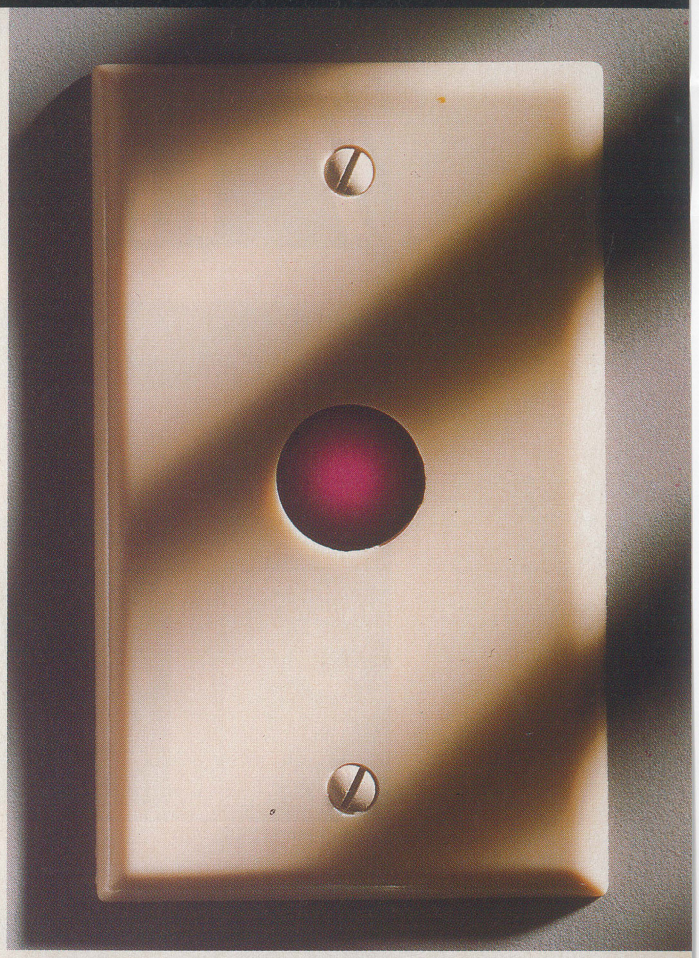
THE FIRST REMOTE CONTROL SYSTEM WITH AUDIOPHILE CREDENTIALS.

If you've been around, you know that remote control audio is nothing new. Almost all the major audio companies have at least some remote components. And total-remote systems are gaining in popularity. But even as the field gets crowded, Kyocera stands apart with three critical advantages:

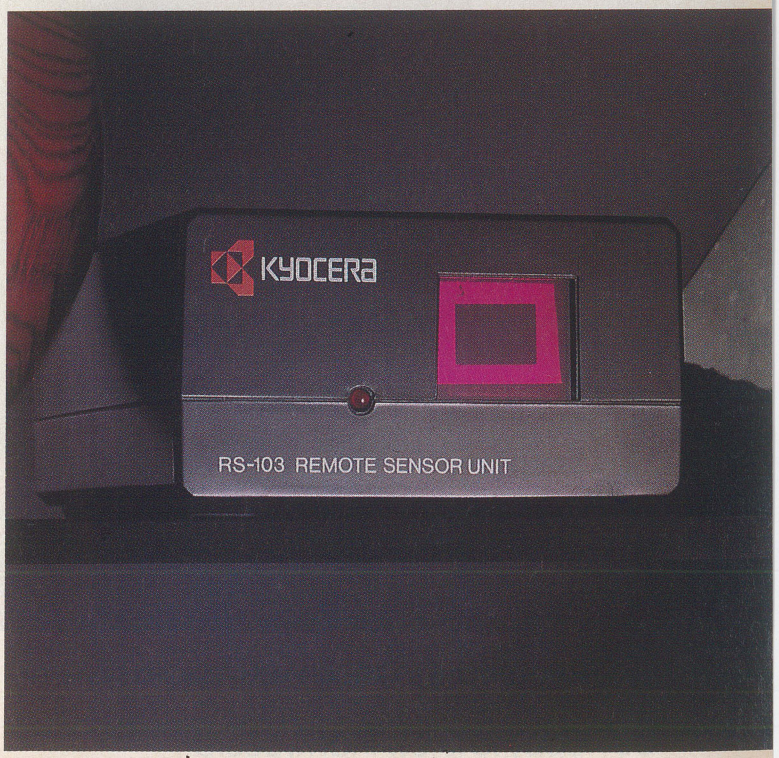
1) This Kyocera system is the world's first remote-controlled audio system with performance to please even the most ardent audiophile. Because it's built on the Receivers, Cassette Decks, and Compact Disc Players that have earned Kyocera high praise from audio critics all over the world. No other offering of remote components can match Kyocera in terms of sheer performance.

2) Kyocera uses a building-block approach so you're not locked into buying a completely new system all at once. All the Kyocera components in this brochure form interchangeable, compatible parts of the Kyocera Full System Remote Control network.

3) Unlike other systems, the Kyocera network can be operated and enjoyed in multiple rooms throughout the house. For the first time, you can carry a 100 Watt* MOS FET Receiver, a Dolby HX Pro Cassette Deck, and an anti-resonant Compact Disc player with you when you go from room to room!

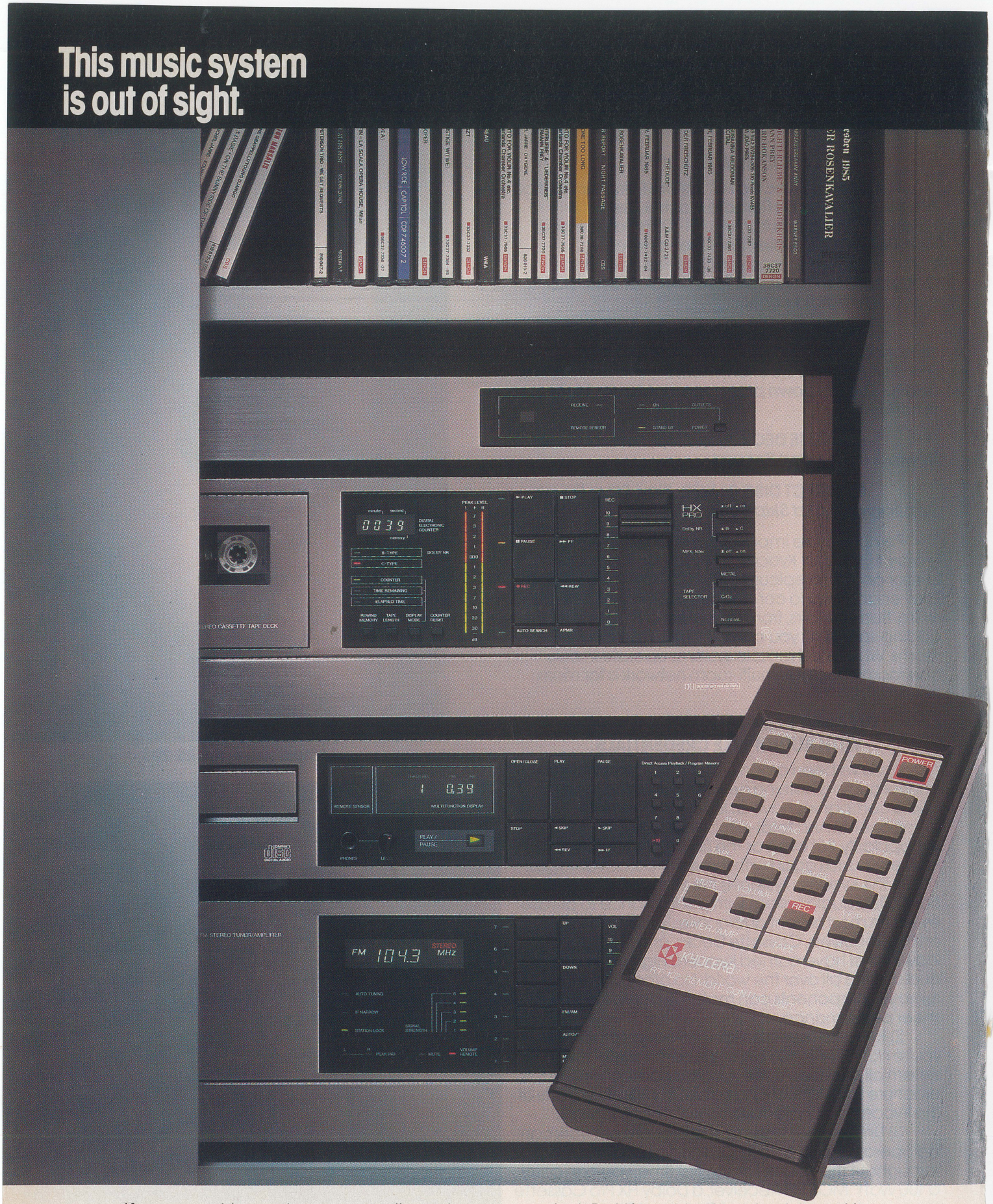


Actual size of the RS-203.



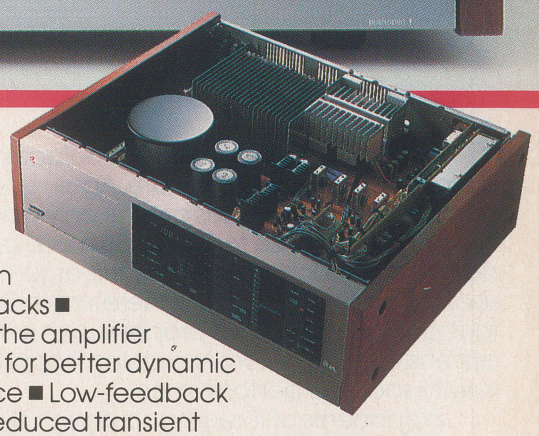
Actual size of the RS-103.

This music system is out of sight.



If you want to make your audio system the centerpiece of your living room, you'll be happy to know that Kyocera components are as beautiful as any on the market. But if you'd rather tuck your Kyocera components discreetly away, you can still enjoy them—and operate them via wireless remote control.

RECEIVERS: We take them seriously.



If receivers have something of a bad reputation among serious audiophiles, there's a good reason. In Japan, where everybody owns component high fidelity, nobody owns one-piece receivers. In fact, North America may be the only place where receivers represent a majority of the market.

For most Japanese audio engineers, receivers are strictly for export. They're not serious components at all. So receivers are designed by the second-string engineers. This explains why even companies with decent separates tend to load their receivers up with meaningless knobs, buttons, and displays.

The irony here is that there's no reason why receivers must be second-class components. There's nothing to prevent a company from using the same common sense and judgement in receiver design as they exercise with separates. This is the guiding philosophy behind Kyocera receivers.

MOS FETS IN THE DRIVER STAGE.

A rarity in receivers, Metal-Oxide-Semiconductor Field Effect Transistors (MOS FETs) are used in the driver stages of all Kyocera receivers for their superior transient response and isolation characteristics.

PRE-OUT/MAIN-IN JACKS.

While it is hard to find a receiver with preamp-output/main amp input jacks nowadays, all Kyocera receivers have them. So you can connect outboard signal processors, use higher-powered amps, or use your receiver as part of an elaborate multi-amp system. That's particularly important considering the multi-room capability of the Kyocera Full-System Remote Control network.

THE KYOCERA R-461.

50 Watts per channel (continuous RMS, both channels driven into 8 Ohms from 20 Hz to 20 kHz with no more than 0.02% THD ■ Compatible with Kyocera Full System Remote Control network ■ Manual/electronic volume control ■ Subsonic filter at 20 Hz with 12 dB/octave slope ■ High filter ■ Two tape monitors with dubbing ■ Preamp Output/Main Amp Input jacks ■ MOS FETs in the amplifier driver stage for better dynamic performance ■ Low-feedback design for reduced transient intermodulation distortion ■ Female banana jacks bypass speaker switching for straight-wire-with-gain circuit ■ Quartz frequency synthesis tuning ■ FM front end with MOS FETs and High-Q varicaps for minimum interference ■ Ceramic IF filters for high selectivity, low distortion ■ 6 AM + 6 FM station presets.

THE KYOCERA R-661.

70 Watts per channel (continuous RMS, both channels driven into 8 Ohms from 20 Hz to 20 kHz with no more than 0.02% THD ■ ALL THE FEATURES OF THE R-461, PLUS: Toroidal transformer ■ Oxygen-Free Copper (OFC) wiring for reduced noise ■ Moving Magnet/Moving Coil phono input stage ■ Parametric bass and treble controls with continuously variable turnover frequency for sensitive and precise tonal adjustment ■ Wide/Narrow IF bandwidth switch adapts to your reception conditions ■ High-frequency FM comparator for reduced noise ■ FM quadrature detector for low distortion ■ Chopper-type FM stereo demodulator for improved stereo separation ■ High blend switch for better sound on weak FM stations ■ 7 AM + 7 FM station presets.

THE KYOCERA R-861.

*100 Watts per channel (continuous RMS, both channels driven into 8 Ohms from 20 Hz to 20 kHz with no more than 0.02% THD ■ ALL THE FEATURES OF THE R-661, PLUS: Parametric bass, midrange, and treble controls ■ Automated IF bandwidth switching (Wide/Narrow) adapts to your reception conditions ■ Switchable de-emphasis for Dolby® FM broadcasts.

CASSETTE DECKS:
Two heads can be better than three.

For years, cassette deck manufacturers have touted the three-head feature. Again and again, we are told that three heads are the only way to achieve frequency response to 20 kHz. So many brands have devoted so much attention to this argument that it seems heretical to suggest there's a better way. In fact, doing three heads properly is an extremely expensive proposition. And doing it poorly is a sure way to sacrifice performance.

Proponents of three-head design like to gloss over the fact that any three-head deck with pretentions to high performance must come to grips with the problem of azimuth error.

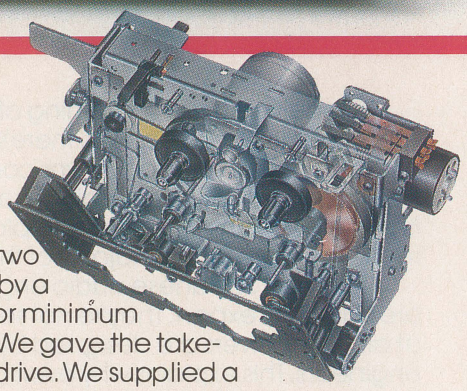
Azimuth error occurs when the playback head gap does not line up precisely with the signals laid down by the record head gap. This kind of error can never occur on two-head decks, where the record and playback gaps are exactly the same. Less than one degree of azimuth error can cause significant loss of response above 15 kHz. And that's ironic, because extended highs were supposed to be the strength of the three-head design in the first place.

Some manufacturers try to reduce azimuth error by placing the record and playback heads close together—often squeezing them through the cassette's central window. Others try to conquer azimuth error through elaborate mechanics and electronics. To be fair, the more elaborate systems do work, but only at incredible cost to the consumer. And the simpler systems? If the response falls short of 20 kHz on Type II tape, then the azimuth error correction is not completely successful.

Kyocera has a fresh approach. We maintain that a properly designed two-head deck can give you examplary frequency response. And our decks prove it. Instead of spending money on elaborate azimuth-error correction, we consciously spent the money on reducing wow & flutter.

A TRANSPORT OF DELIGHT.

The most audible shortcoming of today's decks is wow & flutter. That's why Kyocera concentrated on improving the transport. On the D-811, we used two capstans, isolated by a closed-loop belt, for minimum modulation noise. We gave the take-up capstan direct drive. We supplied a separate high-torque motor to drive the reel hubs. And we even used a third motor to insert the heads into the cassette gently and precisely. The result is sound without the veil of modulation noise, wow & flutter that plagues lesser cassette decks.



THE KYOCERA D-611.

Compatible with the Kyocera Full System Remote Control network ■ Three-motor transport ■ Direct-drive FG servo motor turns the capstan without gears or pulleys—wow & flutter only 0.035% (WRMS) ■ High-torque motor drives reel hubs ■ Third motor gently inserts heads into cassette ■ Sendust-core record/play head achieves response to 20 kHz with Type I and Type II tape, to 22 kHz with metal tape ■ Dolby® B and C noise reduction ■ Switchable MPX filter ■ Fine Bias control ■ Timer recording and play ■ Automatic Program Mute Recording adds four-second blanks between songs ■ Auto Play and Repeat ■ Memory Stop and Memory Play.

THE KYOCERA D-811.

ALL THE FEATURES OF THE D-611, PLUS: Dolby HX Pro Bias Compensation for extended recording range ■ 400 Hz calibration tone for record balance ■ Closed-loop dual-capstan tape drive minimizes modulation noise ■ Wow & flutter reduced to only 0.02% (WRMS) ■ Fluorescent readout of tape time in minutes and seconds ■ LED peak level indicators with peak-hold.

CD PLAYERS: Solving the problem of resonance.

The role of air-borne vibration in degrading turntable sound is long-recognized and well understood. What is only now coming to light is the effect of vibration on Compact Disc players. Because the CD's track of pits is microscopically narrow, vibration can cause mistracking and its consequent data errors. In fact, controlled tests performed for Kyocera by an independent research laboratory confirm that a non-resonant Fine Ceramics chassis incurred significantly fewer data errors than a conventional chassis of similar design. Thanks to the CD format's error-detection and error-correction systems, these data errors are not heard directly. However, the very process of error concealment introduces distortion which can be heard.

Kyocera was the first to design and construct anti-resonant CD players. Kyocera's top-of-the-line DA-910 uses massive chassis parts, mechanical isolation of the laser transport, and a cast Fine Ceramics base to minimize vibration-induced mistracking. Now, with the new DA-710CX and DA-610CX, Kyocera provides similar sophistication to a broader audience of music lovers.

These new CD players feature four Fine Ceramics spacers strategically located in the chassis to isolate the laser transport and printed circuit boards from external vibration. In addition, dual zirconia-ceramic guide shafts, newly developed by the Kyocera Gamou Works, assure smoother travel of the laser transport for superior tracking stability. Compared to molded aluminum or stainless steel, the zirconia ceramic shafts can be machined to much tighter tolerances. In addition, the shafts will stay within tolerance for more than ten times the service life of stainless steel, molded aluminum or plastic.

TOP-QUALITY ANALOG CIRCUITRY.

The ultimate quality of a CD player depends on the attention that has gone into its non-digital circuitry as well as its digital circuitry. That's why Kyocera uses DC amplification, resulting in response that extends from a low of 5 Hz to 20 kHz within a tolerance of ± 0.5 dB. Separate power transformer secondary windings and separate voltage-regulated supplies are used for the analog and digital circuits. This precaution prevents digital noise from leaking through the power supply and contaminating analog signals.

Carefully selected capacitors and expensive Linear-Crystal Oxygen-Free Copper (LC-OFC) wiring assure the lowest possible signal loss. As an additional assurance of low noise, the line output jacks are plated with gold. And one more note: the line output level at these jacks is completely isolated and undisturbed by adjustments to the headphone volume control on the front panel.

THE KYOCERA DA-610CX.

Compatible with the Kyocera Full System Remote Control network ■ Anti-resonant construction with Fine Ceramics chassis spacers for fewer data errors, lower distortion ■ Zirconia-ceramic guide shafts for smoother laser travel, longer life ■ Three-beam laser tracking for superior tracking stability ■ 16-bit linear digital-to-analog conversion extracts the full resolution from Compact Discs ■ DC analog section ■ Ninth-order low-pass filters ■ Separate power supplies for digital and analog circuitry ■ Low-noise LC-OFC internal wiring ■ Gold-plated output jacks ■ "Dedicated" 24-function wireless remote control ■ 16-selection programmability ■ Skip Forward and Back ■ Three-Way Repeat (Track, Disc, and Program) ■ Multi-function fluorescent display.

THE KYOCERA DA-710CX.

ALL THE FEATURES OF THE DA-610CX, PLUS: Optically coupled digital signal routing to eliminate internal interference ■ Digital filtering with four-times oversampling at 176.4 kHz to minimize aliasing noise ■ Dual digital-to-analog converters eliminate interchannel phase delay ■ Digital Subcode Output Port for use with future digital components ■ Third-order bessel-derived analog filtering for minimum high-frequency phase shift ■ Background Music function plays songs on the disc in random sequence.

SPECIFICATIONS

RECEIVERS	R-861	R-661	R-461
(Audio section)			
Power output RMS (both ch. driven into 8 ohms with no more than 0.02% THD, 20Hz–20kHz)	100W/ch	70W/ch	50W/ch
Dynamic short-term power (at 1kHz) (8 ohms) (4 ohms) (2 ohms)	120W/ch 180W/ch 230W/ch	80W/ch 110W/ch 140W/ch	80W/ch 110W/ch 125W/ch
Total harmonic distortion (at rated output)	0.02%	0.02%	0.02%
Power bandwidth (–3dB re:rated power)	10Hz–60kHz	10Hz–60kHz	10Hz–60kHz
Intermodulation distortion (at rated output) (SMPTE)	0.02%	0.02%	0.02%
Slew rate	50V/μsec.	50V/μsec.	40V/μsec.
Rise time	1.0μsec.	1.0μsec.	1.5μsec.
Input sensitivity Phono MC (100 ohms) Phono MM (47k ohms/100pF) Others (30k ohms)	 125μV 2.5mV 150mV	 125μV 2.5mV 150mV	 — 2.5mV 150mV
Maximum input voltage (at 1kHz, 0.5% THD) Phono MC Phono MM Others (with vol. at max. position) (direct CD/AUX, AV/AUX input)	 8mV 150mV 1.3V	 8mV 150mV 1.3V	 — 150mV 1.3V
Signal-to-noise ratio (IHF short circuited, A-weighted at rated output) Phono MC Phono MM Others	 68dB 88dB 100dB	 64dB 82dB 100dB	 — 80dB 95dB
Signal-to-noise (IHF A-202) Phono MC Phono MM Others	 74dB 85dB 90dB	 70dB 82dB 90dB	 — 82dB 89dB
Dynamic headroom	1.0dB at 8 ohms	1.0dB at 8 ohms	2.1dB at 8 ohms
Damping factor (8 ohms at 50Hz)	60	60	40
Tone control Bass at 100Hz Midrange at 800Hz Treble at 10kHz	 ± 10dB ± 10dB ± 10dB	 ± 10dB — ± 10dB	 ± 10dB — ± 10dB
Turnover Frequencies Bass control Midrange control Treble control	 100–500Hz 0.5–2kHz 2–10kHz	 100–500Hz — 2–10kHz	 — — —
Loudness compensation (volume at–30dB) at 100Hz at 10kHz	 +8dB +2dB	 +8dB +2dB	 +8dB +2dB
High filter (6dB/oct.) at 10kHz	–6dB	–6dB	–6dB
Subsonic filter (12dB/oct.) at 18Hz	–3dB	–3dB	–3dB
Tape recording output level (at rated input sensitivity)	130mV	130mV	130mV
(FM section)			
Tuning range	87.5–108MHz	87.5–108MHz	87.5–108MHz
Usable sensitivity (MONO)	9.8dBf	10.1dBf	10.3dBf
50dB quieting sensitivity (MONO) (STEREO)	14.8dBf 35.8dBf	15.5dBf 36.5dBf	17.0dBf 37.2dBf
Capture ratio (normal IF)	1dB	1dB	1.2dB
Distortion (normal IF) (MONO) at 1kHz (STEREO) at 1kHz	0.06% 0.07%	0.07% 0.1%	0.08% 0.12%
Separation (normal IF) at 1kHz	58dB	55dB	48dB
High blend (separation at 1kHz)	20dB	—	—
Frequency response (30Hz to 15kHz)	+0/–0.5dB	+0/–0.5dB	+0/–1.0dB
Signal-to-noise ratio (Mono A weighted) (Stereo A weighted)	 82dB 76dB	 80dB 74dB	 77dB 72dB
Stereo threshold	20/40dBf	20/40dBf	20/40dBf
Muting threshold	20/40dBf	20/40dBf	20/40dBf
Alternate channel selectivity (Normal IF) (Narrow IF)	 40dB 81dB	 40dB 75dB	 55dB —
Spurious rejection	95dB	88dB	86dB
IF rejection	120dB	110dB	100dB
Image rejection	85dB	68dB	68dB
Subcarrier product ratio	65dB	65dB	58dB
Recording output voltage	0.75V	0.75V	0.75V
Antenna provision	Unbalanced 75 ohms 300 ohms adapter	Unbalanced 75 ohms 300 ohms adapter	Unbalanced 75 ohms 300 ohms adapter
(AM section)			
Tuning range	520–1710kHz	520–1710kHz	520–1710kHz
Usable sensitivity (S/N = 20dB) (Loop antenna) (Direct terminal)	 300μV/m 20μV	 300μV/m 20μV	 300μV/m 20μV
Signal-to-noise ratio	50dB	50dB	50dB
IF rejection	60dB	60dB	60dB
Selectivity (+20kHz)	45dB	45dB	45dB
Distortion	0.3%	0.3%	0.3%
Recording output voltage	0.3V	0.3V	0.3V
Image rejection	40dB	40dB	40dB
(General)			
Power requirements	AC 120V 60Hz	AC 120V 60Hz	AC 120V 60Hz
Power consumption	320W	210W	175W
Dimensions Width Height Depth	 18-1/8" (460mm) 5-3/16" (132mm) 14-3/16" (360mm)	 18-1/8" (460mm) 5-3/16" (132mm) 14-3/16" (360mm)	 18-1/8" (460mm) 4-5/16" (110mm) 13-3/8" (340mm)
Weight	27 lbs. (12.3kg)	25 lbs. (11.7kg)	18 lbs. (8.2kg)

CASSETTE DECKS	D-811	D-611
(Electrical)		
Recording bias frequency (AC bias type)	105kHz	105kHz
Erasure system	AC type	AC type
Head Record/playback Erasure	Sendust Ferrite	Sendust Ferrite
Frequency response (response ± 3dB) Metal CrO_2 Normal	 20Hz–22kHz 20Hz–20kHz 20Hz–20kHz	 20Hz–22kHz 20Hz–20kHz 20Hz–20kHz
Signal-to-noise ratio (DIN 45500/70μsec. EQ tape) NR out weighted (A) Metal Dolby B type NR effect (WTD CCIR) Metal Dolby C type NR effect (WTD CCIR) Metal	 58dB 10dB 20dB	 58dB 10dB 20dB
Input sensitivity 10k ohms Mic 50k ohms Line	 0.5mV 70mV	 0.5mV 70mV
Output OVU level at 8 ohms Line Headphone	 580mV 100mV	 580mV 50mV
Harmonic distortion (1kHz OVU level) Line	1.5%	1.5%
Separation (Band pass filter, 1kHz) Line	40dB	40dB
Erasure effect (Band pass filter, 1kHz + 10dB VU level	70dB	70dB
Bias adjustable range	± 15%	± 15%
APMR time	4 sec.	4 sec.
Recording calibration frequency	400Hz	—
(Mechanical)		
Motors Capstan drive Reel drive Head drive	Brushless FG servo Governor-less DC motor Governor-less DC motor	Brushless FG servo Governor-less DC motor Governor-less DC motor
Wow and flutter (MTT-III JIS WRMS)	0.02%	0.035%
Speed tolerance (MTT-III)	± 0.5%	± 0.5%
Rewind/fast forward time (C-60)	75 sec.	75 sec.
Capstans	Dual capstan	Single capstan
(General)		
Power requirements	AC 120V 60Hz	AC 120V 60Hz
Power consumption	33W	33W
Dimensions Width Height Depth	 18-1/8" (460mm) 5-3/16" (132mm) 12-1/8" (308mm)	 18-1/8" (460mm) 4-1/2" (114mm) 12-13/64" (310mm)
Weight	18 lbs. 1 oz. (8.2kg)	15 lbs. 7 oz. (7kg)

COMPACT DISC PLAYERS	DA-710CX	DA-610CX
Total harmonic distortion (1kHz, with 20kHz LPF)	0.005%	0.005%
Frequency response (± 0.5 dB)	5Hz–20kHz	5Hz–20kHz
Signal-to-noise ratio (with 20kHz LPF & IHF-A filter)	over 95dB	over 90dB
Separation (at 1kHz, with 20kHz LPF)	over 90dB	over 90dB
Dynamic range	over 90dB	over 90dB
Output level	2.0V	2.0V
Output impedance	2.0k ohms	2.0k ohms
Power requirements	AC 120V, 60Hz	AC 120V, 60Hz
Power consumption	13W	12W
Dimensions Width Height Depth	 18-1/8" (460mm) 3-9/16" (90mm) 12-1/8" (308mm)	 18-1/8" (460mm) 3-9/16" (90mm) 12-1/8" (308mm)
Weight	14.5 lbs. (7kg)	13.2 lbs. (6kg)

- Dolby and ◻◻ mark are trademarks of Dolby Laboratories Licensing Corporation.
- Specifications and design are subject to change without notice for improvements.
- Actual color of product exterior may be slightly different from printed product photo.
- All Kyocera audio products come with a warranty. At the time of your purchase, please be sure to obtain it from your Kyocera dealer and ensure that the dealer fills it in for you.

KYOCERA

Built right from the ground up.

For your nearest Kyocera dealer call:
1-800-633-2252 Ext. 224

Kyocera International, Inc., 100 Randolph Road,
CN,6700, Somerset, NJ 08873-1284, (201) 560-0060

Kyocera Canada, Inc., 7470 Bath Road,
Mississauga, Ontario, L4T 1L2, Canada, (416) 671-4300

KEN POHLMANN

OUT OF BOUNCE

Illustration: ©1986, Curt Doty

Let's try a conceptual experiment. Imagine that you've just left *Audio*'s New York offices. You pause on the busy Manhattan sidewalk to blindfold yourself, then walk out into the middle of the street. Your life, of course, would be almost immediately snuffed out by a taxi. But in the brief moment prior to that, you would enjoy the miracle of aural spatiality. Your ears would hear the sounds of traffic and people all around, jet planes overhead, subway trains below. In addition to all the other received information, your brain would be able to localize the direction and relative distance of all of those sounds, thanks to the expertise of your ear/brain's psychoacoustical skills.

As I discussed last month, your ear/brain is fine-tuned to ambient information; if that information is lacking, you immediately judge sound to be less "real" than it is, or less interesting. That's where DSP—Digital Signal Processing—is playing an increasingly important role in audio. The computational clout of digital circuits and software permits unprecedented manipulation of sound. Among other audio applications, DSP number-crunching is being used to synthesize psychoacoustic cues, in order to achieve better re-created sound.

Let's try another conceptual experiment, this time in the relative safety of a rock 'n' roll concert. The lead guitarist plays a big power chord; let's carefully follow the sequence of events in time. When he plays, sound emanates in all directions; you'll eventually hear all that sound, but at different times, because it will follow paths of different lengths. The first sound you hear is the direct sound from the P.A. system, coming from the front. Next come first-order reflections: The sound of the chord that has bounced off the stage floor or proscenium, which arrives about 10 mS later; and sound from side walls or the ceiling, which come next, about 20 mS later. From behind you comes sound that is returning after bouncing off the back wall, as well as second-order reflections—that is, sound that has undergone two reflections.

At this point, only careful analysis could differentiate the sounds of the original chord as you are bombarded by a thicket of lower order reflections arriving closely together from all directions. As the sound bounces around, it loses energy, and its amplitude slowly dies out.

In real time, you've heard the chord and hall ambience, including early reflections and reverberation. Your ear/brain has received detailed information on amplitude, relative time delay, direction, and frequency response on thousands of variations of the original chord's sound. Given that data, you have rapidly constructed a model of the hall including its size, shape, equalization, and your relative position within it.

While a good hall supplies all this free of charge, it is a different matter in the recording studio, where the engineer must create most ambient information from scratch. Using DSP, he is able to precisely create a signal-processing chain which models the desired acoustical space. Consider the block diagram shown in Fig. 1. DSP contains all the building blocks, mainly software programs, to compute the numerical equivalents of room acoustics. The engineer merely selects the desired parameters, then relaxes while the program takes over. Would you like to put Mr. Mister in a large, live auditorium with a slightly boomy low end? No problem.

The audio computer performs computations on the data according to the program, contained in RAM or ROM, that has been selected. For concert-hall simulation, the program might be structured according to the signal flow chart in Fig. 2. Using the stereo channels as input, the computer performs equalization, delay and reverberation computations. The sonic output is the re-creation of an existing sonic environment, or the creation of an entirely new (and perhaps physically impossible) space.

Virtually all popular recordings benefit from DSP, and more than a few classical recordings undergo an acoustical facelift. But there's a catch. While the acoustical parameters of a space have been defined, the reproduced model is incomplete. If you listen to a recording at home and conclude that you are in a concert hall, it would be more than your ear/brain that was confused.

The problem, of course, is that two loudspeakers cannot re-create the acoustical ambience surrounding you

Some would employ heavy DSP in the studio so that regular playback gear could be used, while others would synthesize ambience upon playback.

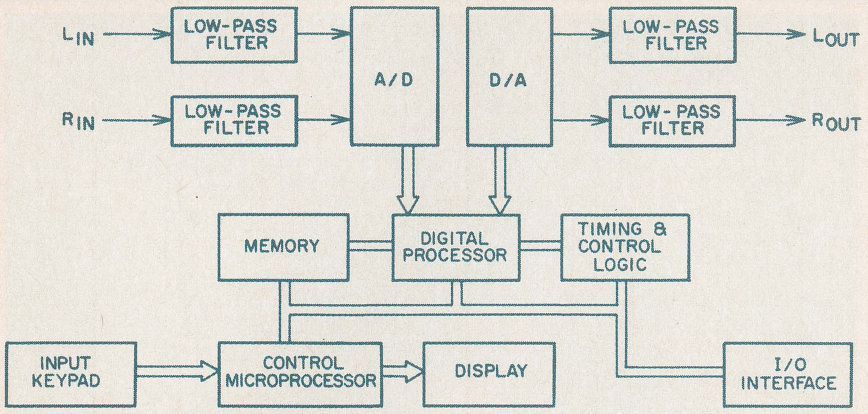


Fig. 1—Digital signal-processing hardware. Single lines represent analog signals, double lines indicate digital data; digital links are two-way unless otherwise indicated. The I/O interface is for direct connection to other digital devices.

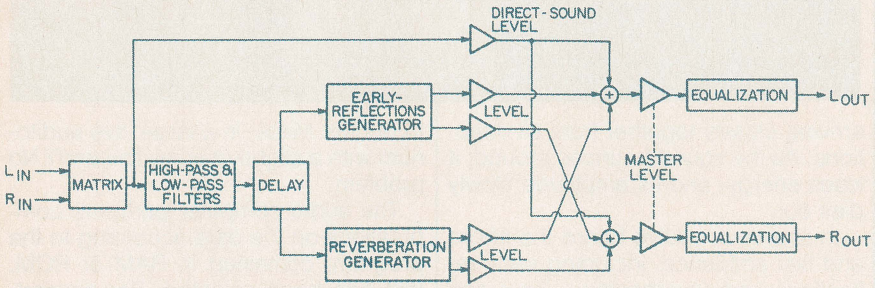


Fig. 2—Software model of digital signal processing.

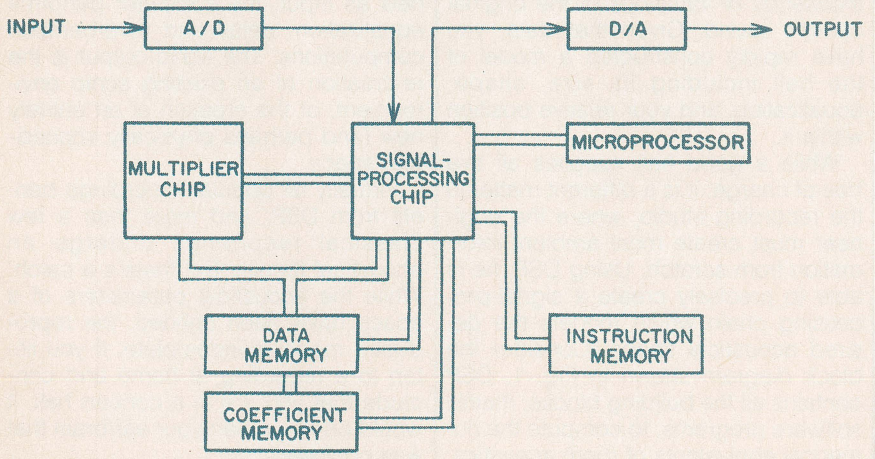


Fig. 3—A multiple-chip digital signal-processing system. All digital data paths shown (double lines) are two-way.

in a concert hall. For starters, the ambient information supplied by your listening room is incorrect; moreover, the ambient information coming from the speakers, while correct, is mostly coming from the wrong direction. So your localization cues are all screwed up. However, digital signal processing *could* be used to create concert hall-sounding aural cues. In theory, in the same way your ear/brain creates a phantom image where there is no loudspeaker, it could also create a concert hall where there is none.

There are two approaches to the problem. One school of thought believes that heavy-duty DSP in the studio could be used to encode the signal so that ambience, if not *surround* ambience, could be reproduced through two loudspeakers and conventional playback electronics. Through analysis of the acoustical information at each ear and the relationship between the signals each ear receives, a program could be written to duplicate the sound-pressure ratio of signals reaching each ear and the sound pressures common to both. Because the ear/brain responds only to the input at the ears, a correctly simulated input would cause the same response. Thus, a surround environment could be created from a conventional playback system.

Another school would use DSP to synthesize ambient information directly upon playback. Parameters could be set through analysis of the ambient information on the input signal, or according to the user's taste. The processor would supply a signal delayed, reverberated, and equalized precisely according to an internally consistent acoustic model. The ambient information could be mixed into the main loudspeakers or routed to additional ambient loudspeakers, as in many movie theaters.

Until recently, both ideas were impractical because the required processing system was pretty expensive. But that is changing, as DSP chips become available. Figure 3 shows a complete DSP on a few chips. The audio signal is input to a processing chip through an A/D converter and output from the chip through a D/A (these would be omitted in an all-digital system). The processor manipulates the

As the cost of ambience synthesis drops, products are appearing that put the power of psychoacoustics at our fingertips.

data with the help of peripheral chips. The processing chip includes an ALU (arithmetic logic unit) and a microprogram sequencer. The other principal chip is a parallel multiplier. This miniature DSP could be clocked at 8 MHz, executing 166 instructions within every 48-kHz sampling period.

Because of the cost reduction afforded by such integration, consumer products using DSP are appearing. Eventually, equalization, mixing, reverberation, compression, expansion, time delay, sampling frequency conversion, acoustical measurements and analysis could all be accomplished with home equipment incorporating inexpensive DSP.

An early example is the Sony SDP-505ES surround-sound processor. It accepts a stereo analog signal, performs DSP on PCM data with 44.1-kHz, 16-bit specifications, and outputs a stereo analog signal. Although other applications are possible, the synthesized information is typically directed to two ambience loudspeakers. They might be placed in corners, facing a reflective surface to provide widely dispersed sound.

The SDP-505ES is programmed to add delay to an audio signal, in 0.1-mS increments, from 0 to 90 mS. For video (theatrical) software, the unit provides Dolby Surround Sound decoding with equalization and delay. Other modes provide preset ambient synthesis for concert-hall and other surround-sound environments.

The heart of the SDP-505ES is a DSP chip, the CXD-1079, which contains a multiplier and adder, and interface circuits. Delay is accomplished by writing the signal to RAM, then reading it after the prescribed time period has elapsed. Equalization and Dolby decoding follow other simple algorithms—a piece of cake for a digital processor.

The power of psychoacoustics is thus placed at your fingertips. Perhaps in the future, with the availability of consumer DSP products, music will be recorded and played back in totally anechoic rooms, with synthetic room acoustics added in real time, during playback, according to your taste. The enjoyment of recorded music would no longer be constrained by the acoustics of the recording or listening room. Whether this created opportunity would help or harm the realism of recreated music is a matter of conjecture at this point.

"Digital audio" has thus far referred mainly to a method of audio storage, but in the near future the term will have much wider applications. Digital Signal Processing will pervade the recording and reproduction chain, providing unprecedented clout to the manipulation of audio signals. Only when analog systems (with digital storage) are replaced by systems that are wholly digital will the true benefit of "digital audio" really become apparent.

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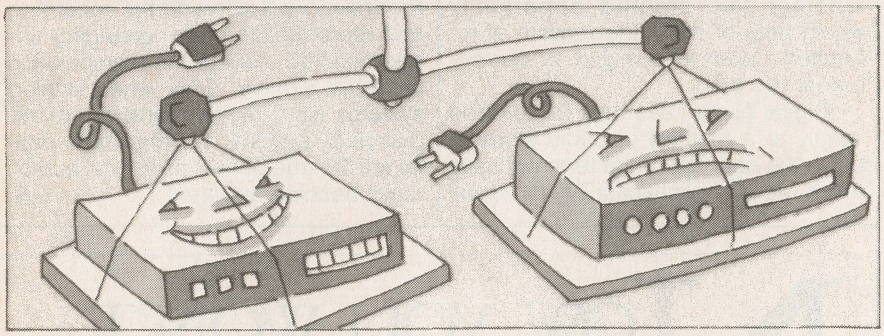

Illustrations: Michael A. Donato

Turning Our Tables

Specification tables like those in our annual directories are actually just two-dimensional views of multi-dimensional data sets. This is easier to see when you run the information through a good computer data-base program which can organize it along any desired data dimension. Nelson Pass of Threshold did that with a selection of the audiophile amplifiers listed in last year's Directory, and came up with the following new slants. With a computer data base, and patience enough to enter all the data, you could do the same with the information listed in this year's Directory.

The 152 amplifiers Pass entered in his data base ranged in price from $298 for the NAD 2155 to $11,000 for the Esoteric Audio Research 529. The median price was $1,495; as it happened, this was one of the more popular price points, shared by five amplifiers in his listing. But the most popular price point was $995 (nine models), with $6,000 (six models) in second place and the median price running third. Fifteen of the amplifiers Pass listed were priced at $500 or less, 43 between that price and $1,000, 38 between there and $2,000, 40 more in the $2,001 to $5,000 price range, and 16 amplifiers priced higher still. In reality, the price spread is even greater than the 37:1 ratio indicated, since virtually all amplifiers below $4,000 are stereo, while virtually all those above that price are mono. You'd therefore need *pairs* of the more expensive amps for stereo, making the true spread from $298 to $22,000, a ratio of nearly 74 to 1.

Price per watt per channel, however, showed an even greater spread, 80:1, from $1.10 per watt (for the Soundcraftsmen PCR800) to $88.48 per watt for the Levinson ML-2. Two amplifiers, the Bryston 2B-LP and the Audire Otez, fell exactly at the median of $5.50 per watt; but they were very different in other respects—the Audire has five times the Bryston's power, at five times the price. Nearly half the amplifiers cost $5.00 per watt or less, and 111 (73% of the total) were $10 per watt or less. Only 13 amplifiers cost more than $20 per watt, and only four (the Audio Research D79, Classé DR-2A and DR-3, and the Levinson ML-2) were above $30 per watt.

Price per pound covered a comparatively narrow range, a 5.75:1 spread bounded by the Adcom GFA-2, at $12.93 per pound, and the Levinson ML-2, at $74.40; the median fell at about $34 per pound, right between the Classé DR-2A ($33.77) and the Strelioff SC1 800 ($34.48). As you'd expect from the small spread, there was a fairly tight correlation between weight and price, with five of the ten lightest models being among the ten lowest priced, and nine of the ten heaviest models also among the ten most expensive.

The lightest amp was a Carver, of course (the nine-pound M-400t) and the heaviest was New York Audio Laboratories' Megamoscode 1000 (300 pounds). Median weight was 45 pounds, a weight shared by seven different models; the most common weight, however, was 25 pounds (11 models) followed by 55 pounds (eight models).

Not too surprisingly, the lightest amplifiers also tended to offer the most power per pound. Carver and Soundcraftsmen were the clear winners here, with Carver's four amplifiers offering anywhere from 22.82 to 44.67 watts per pound and Soundcraftsmen's both coming in at 17.83 watts per pound. But there was no such correlation at the other end of the scale, where the Classé DR-3 and DR-2A, at 0.71 and 0.77 watts per pound, respectively, were far from the heaviest. The median value fell between the McIntosh MC2255 (6.10 watts per pound) and the Robertson Sixty Ten (6.15).

The lowest powered amplifier in Pass's sample was the Naim NAIT, a 20-watter, while the highest powered was the Strelioff SC1 800, rated at one kilowatt. The median value was 120 watts (a rating common to five amplifiers), while the most popular ratings were 100 watts (28 models!), 200 watts (16 models), 250 watts (12 models) and 50 watts (12 models).

Timing Tricks

My college roommates and I once did an A/B comparison of the Furtwängler and Toscanini recordings of Beethoven's Ninth Symphony. To do it, we had to dub one recording onto tape, so we could run the two in parallel and switch between them. (As expected, the Furtwängler version, on four disc sides, took longer than the Toscanini, on three. What we did not expect was that Furtwängler ran *ahead* of Toscanini in some places.) If we'd had a stopwatch, we might have quantified the timing differences between those recordings.

Had the Compact Disc system been around back then, we could have read comparative timings for each movement off the player's display. Music reviewers are already discovering this trick, and a growing number of reviews spell out the timing differences when comparing renditions of a work. It's another small instance of the ways in which technology influences art. (*Editor's Note:* It has been widely recognized that proponents of the theory that criticism is an art are all critics.—*E.P.*)

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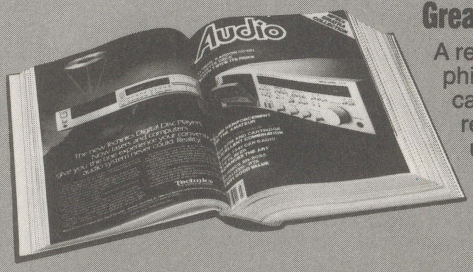

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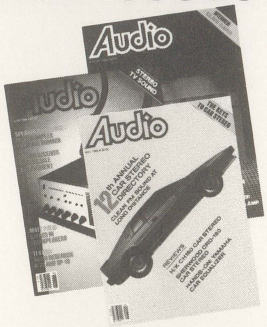

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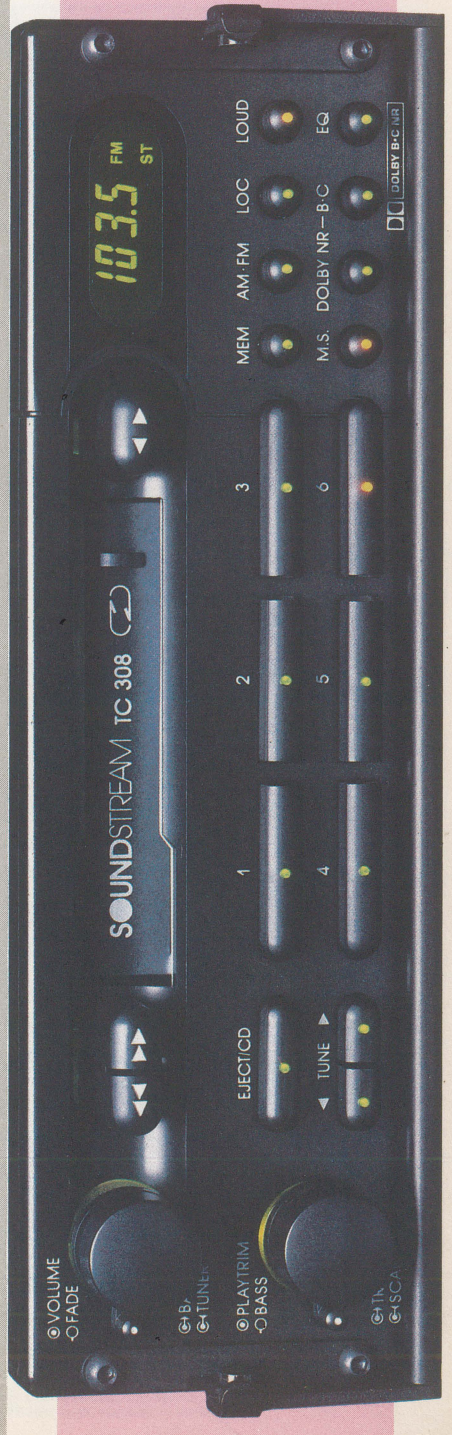

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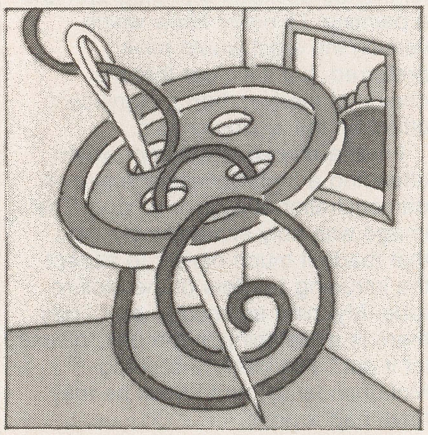
Relative Remotes

A package arrived for one of our staff members. "Oh, that's a remote control I got for my uncle," she explained. That got us wondering—wouldn't it be nice to have remotely controllable relatives? How about a "Play" button for when they get too serious? Fast forward to speed the parting of the ones we don't like, and rewind to bring back the ones we do? "Stop" for rambunctious nieces and nephews?

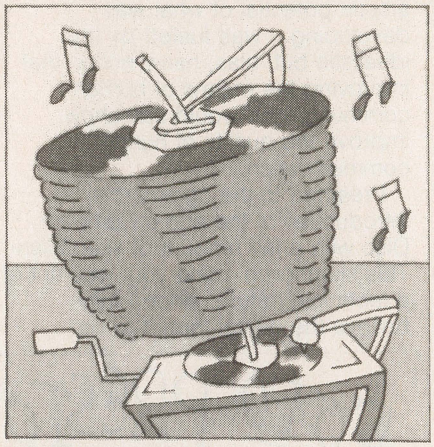
The system would also take care of relatives who aren't quite on the same channel as the rest of us. The most important control of all, however, would probably be "Mute." (*Editor's Note:* Readers should take the above with a grain of salt; Mr. Berger was married only a few months ago.—*E.P.*)

Button, Button

I have an equalizer, but I rarely use it. My preamp has buttons galore, to switch in tone controls, a delay system, a spatial enhancer, and a mild expander; I rarely use them, either. Yet I delight in having them—not so much because the fearsome array of controls impresses people (if anything, it scares them off), but



rather because all of these things *are* worth using . . once in a while, on recordings or in situations that require them. I don't think I'd want a preamp that didn't have a tone-control bypass (I'm by no means certain, however, that I can hear the difference between the "bypassed" and "flat" settings), but I wouldn't want a preamp without tone controls, either.



Changing Times

The record changer is moribund; long live the changer.

There are still a few turntables that can play a stack of records. Dual and Technics had some multi-play models, last I looked, and there were a few cheapies available from other companies. But the heyday of the multi-play table passed years ago; now, even department-store rack systems include single-play turntables as a matter of course. Audiophiles originally spurned the changer for the drag the early automatic linkages imposed on tonearms; with the advent of the Dual 1009, the changer grew respectable again. Then, as the art of record playing advanced, its problems—some real, some imaginary, and some curable—made it anathema again.

But while the record changer is disappearing, its convenience is coming back, in multiple-play CD and cassette decks. For home use, Sony makes a multi-play cassette deck (sold in the U.S. by Benjamin), and Aiwa and Mitsubishi offer some in pre-matched audio systems. For the car, you can get an Alpine, with the probability of a Kraco soon and at least one other waiting in the wings across the Pacific.

The concept may flourish even more in Compact Disc players. Sony has matching changers for home and car, and Pioneer, Mitsubishi, and Nikko have them for the home (see article in the June '86 issue). Alpine and Denon have models in Japan, while another, announced by Technics a while back, is only now reaching the market. And Seeburg has announced a jukebox based on a 60-disc changer mechanism made by Sony.

The CD is such a natural for automatic changing that you can expect more. The discs are less delicate than LPs, and the nature of the playback system should forestall the record changer's problem of a stylus angle that changed as the height of the record stack grew. And since CDs are recorded only on one side, there's no need to flip them. This, plus the CD's longer playing time, means fewer interruptions in the music: A three-LP album, which would be interrupted five times for changing and flipping, would be interrupted only once if it fit on two CDs, and twice if it occupied three.

Not only that, but CD permits some conveniences that LP wasn't as amenable to. Random track access, for example, is built into the system. And then there are those extra data bits, not yet firmly assigned, which could be used for graphics, song lyrics, selection titles, or what have you. Conceivably, standards will be developed to embrace all those uses and more—equivalent bits in the disc index section, for example, could be used to tell the player which way the subcode bits in a given disc should be used. If the extra bits were used for titling, a changer could scan through and memorize the titles of each selection on the disc, displaying the entire list on your video screen so you could punch in the selections you wanted without looking at the jacket.

The ultimate automation for the music lover might be something a bit harder to realize. I'd like a system which indexes themes as well as tracks, so I could hum a few bars of something into a mike and have my system tell me what it is, then play it for me. This would be more useful for classical than for pop listeners, because classical themes are usually heard without lyrics to tie them to their titles. Jazz is largely without lyrics too, but is often based on themes that originated as pop songs. Still, some jazz variations are so far from their original theme that a computer like HAL from *2001: A Space Odyssey* would be needed to trace them back to their originals.

Marshall McLuhan wrote of the value of distortion. With the arrival of CDs I've been re-reading him lately, and I think he may have had a point.

Something Gained, Something Lost

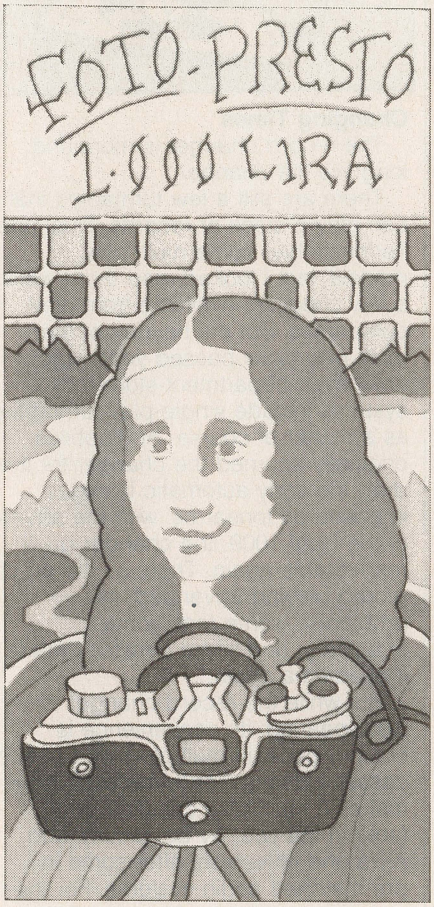
A lot has happened in the consumer audio business over the last few years. The introduction of new playback formats, including PCM, Compact Disc and hi-fi video, have, unquestionably, improved the quality of the sound available to the home listener. There is, however, a somewhat different perspective to the situation that I think is worth examining. During these times of frantic technical activity, it is all too easy to ignore the way that new developments relate to the artistic and creative work that is the true foundation of our "home entertainment" systems.

Back when I was in college, particularly in grad school, I hung around with a group of people who fancied long, involved philosophical debates about media. We, as artists and engineers, were all actively involved with electronic communications, technically and creatively. Our debates ran the spectrum from pretentious to profound, dealing with such diverse subjects as the influence of television on contemporary art, or the optimum sampling rate for a then-hypothetical digital audio recorder.

Much of the trendiness related to such dialectic was pioneered by the Canadian media guru Marshall McLuhan ("The medium is the message") more than a decade earlier. In the nature of such matters, McLuhan had gradually slipped from the front-line avant-garde into the media-theory "establishment." He was out of fashion. After all, here we were all caught up in the promise on the digital horizon: Limitless bandwidth, infinite dynamic range, pure response . . . truly realistic reproduction. How could we possibly embrace a man who spoke of the value of distortion?

McLuhan talked about how the subconscious process of mentally completing the raster television image was an involving and, possibly, a creative activity, as if a certain amount of nonrealism in the perceived image actually facilitated fantasy and imagination. I readily dismissed this notion as I worked at increasing the accuracy of audio reproduction, and dreamed of the artistic potential of what was developing. I was fueled by the idealistic but, alas, naive notion that improving the means of human communication would somehow improve the quality of human communication.

I reacted to the commercial introduction of the audio Compact Disc with a fair amount of skepticism. This skepticism, mind you, was not of a technical nature, since I fully believe the digital format to be



audibly excellent. Rather, it focused on two nontechnical issues. First, it seemed to me that a lot of time and money had been expended to solve relatively uninteresting audio reproduction problems—noise, distortion, etc. I had hoped that the next major audio improvement would be in the area of imaging and ambience encoding. My second reservation related to the long-term availability of work with insufficient commercial potential to warrant digital release. In any case, CD was an important advance, and I eventually purchased a player.

Much to my chagrin, I caught the bug. I began to play my few CDs over and over. Virtually all of my most treasured recordings existed only on phonograph records, but treasured recordings were apparently no match for a laser. The first time I saw a digital re-release of a much-loved album I was ecstatic. I couldn't wait to hear it. And it was good indeed, without a doubt, lows to highs. Sure, I could hear the limitations of the analog master, but so what?

As good as the audio quality of this CD was, I began to notice that something subtle was bugging me. I didn't quite hear the record I remembered. It took a while to understand what it was. Different EQ? Less compression? Pure sentimentality? No, the reproduction was simply too good.

The recording, rock music, had changed from an entity in and of itself into a reproduction of something else. I could hear words that I never heard before, studio sounds, background tracks, bad tape erasing—fascinating, but definitely different. Like the difference between a photograph and a painting. I'll never know which version the artist would have preferred, but it's clear that the choice of medium had a significant effect on the artistic results.

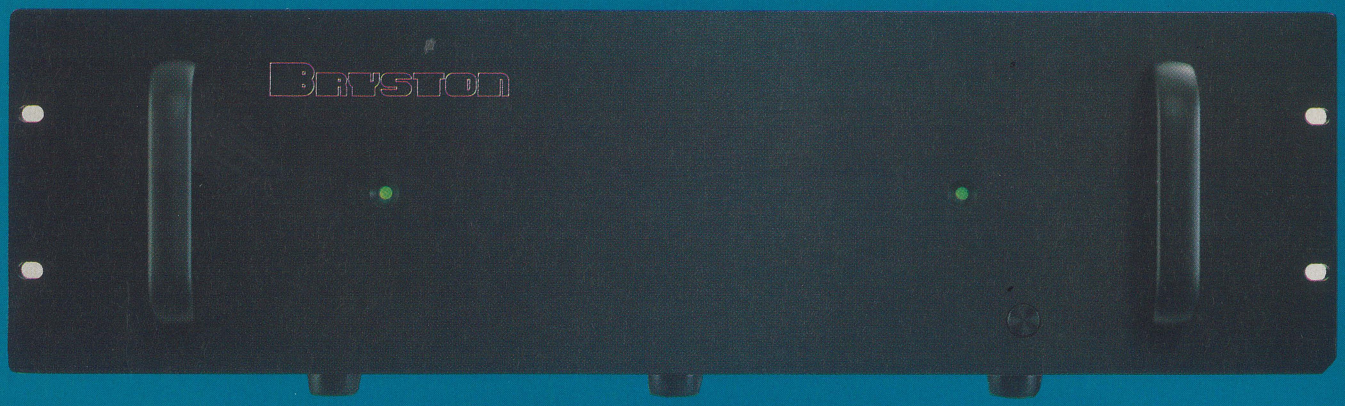
I had a related experience when attending a high-definition television demonstration a year or so ago. The image was truly extraordinary, and that made it much harder to accept the intruding borders of the picture tube. My mind seemed to say, "Hey, there is a real thing in the box, please let it out." I've been re-reading McLuhan lately, and I think he may have had a point.

Lest I am accused of being anti-digital or a reactionary, I do believe in progress. I will always want ever-better sound. It's just that I happen to enjoy the works of artists who struggled with a certain medium and produced works for that medium. I guess I'm destined to keep buying CDs. But I'll keep my turntable too.

Kenneth L. Kantor

Illustration: Michael A. Donato

BRYSTON



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BRYSTON

A LETTER FROM THE PRESIDENT

Bryston was incorporated in February 1962. Our original concept was the manufacture of specialty electronics with emphasis on quality of components and with extreme care in assembly. In other words, we wanted to be the best. This "ultimate-quality" commitment has only strengthened with time. Our policy is constantly to improve our products, our service, and our accessability. Our warranty coverage, a full Five Years, reflects the excellent reliability record our products have shown, and our confidence in them.

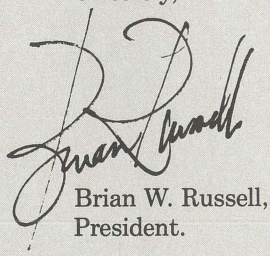
In the field of sound reproduction, Bryston maintains as its goal the achievement of complete musical accuracy. Since music is a very complex process, the technology required in its reproduction is often very involved and rich with challenge. Our continuous research into the art and science of electronic amplification of musical signals has yielded many original solutions to what seemed insurmountable obstacles.

We are proud to have been among the first "Audiophile" companies, and even more proud to remain at the forefront of excellence in audio. This book will provide some insight into the techniques and philosophies we employ.

At Bryston, the term "best" applies to the way we conduct our business as well as to the performance of our products. Bryston's integrity is and will remain uppermost in our business dealings. You will find us courteous, helpful, and fully interested in your satisfaction indefinitely.

Time has proven our original concept a valid one. Our reputation and our market strength have continuously improved. Your Bryston system will retain its musical accuracy and its value for many years to come.

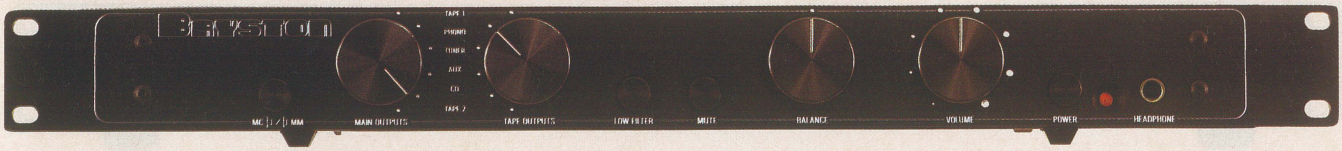
sincerely,



Brian W. Russell,
President.

PRE AMPS

MODEL 12B



Bryston preamplifiers, as with all Bryston components, are designed with one purpose: absolute musical accuracy. This means that distortion of the original waveform must be held to the minimum possible with presently available technology. The noise is as low as you have ever experienced from a preamp. The distortion, of any type, is so close to nonexistant as to be nearly immeasurable. The equalization accuracy is not measured in decibels (1/10 Bel) but in millibels (1/1000 Bel). Bryston preamplifiers cannot be overloaded by any input signal available from any commercial material. They do not add "euphonic" colorations, nor do they alter the clarity of even the most beautifully lucid recordings.

The Model 12B and the Model .5B are full-function preamplifiers. They are intended as control centers for the finest sound systems. They do not, however, contain controls which are not useful, such as "bass" and "treble". (The systems in which they will be used will hardly require such broadband tailoring.) The controls are all useful and convenient; switching among various sources, low filter for record warps, tape monitoring facilities, mute, balance and volume.

The Bryston 12B is an elaborate and flexible center for the most complete sound systems. It features two phono inputs, one of which is equipped with Bryston's superb moving-coil step-up stage. It allows for the connection of two tape decks, with full dubbing facilities in either direction. There is a dedicated C/D input, as well as tuner, and auxiliary inputs, for a total of seven separate sources. (All sources are available at any time from the tape outputs, regardless of what is being fed to the amplifier). In addition, the 12B contains a headphone jack for private listening, (with automatic speaker disconnect), and a special line-level output for the connection of other amplifiers allowing independent volume control at remote locations. The 12B preamplifier is equipped for the true audio enthusiast, with enough flexibility and expansion potential to adapt to the most complex sound systems.

The Bryston .5B is a preamplifier for the simpler sound system, with 4 inputs, including one phono. The tape monitoring facility is less elaborate, consisting of a single push-button, but like the 12B, the Point-Five-B is intended to be used with the finest signal sources.

Regardless of which Bryston preamplifier you choose, they all employ the same electronics, (including Bryston's novel and fundamentally correct phono section). Thus they all enjoy the same superb specifications, and the same exceedingly musical sound quality. They all employ ultra quality components, including precision volume controls with 1/4dB tracking, metal film resistors, polystyrene capacitors and heavily gold plated connectors. They use the most careful and exacting assembly and test procedures, with transistors hand-selected and matched to better than 1%. Whatever the size and complexity of your sound system, a Bryston preamplifier is a "final purchase", with performance that establishes a standard which is unlikely to be improved upon in the near future.

MODEL .5B

POWER AMPS

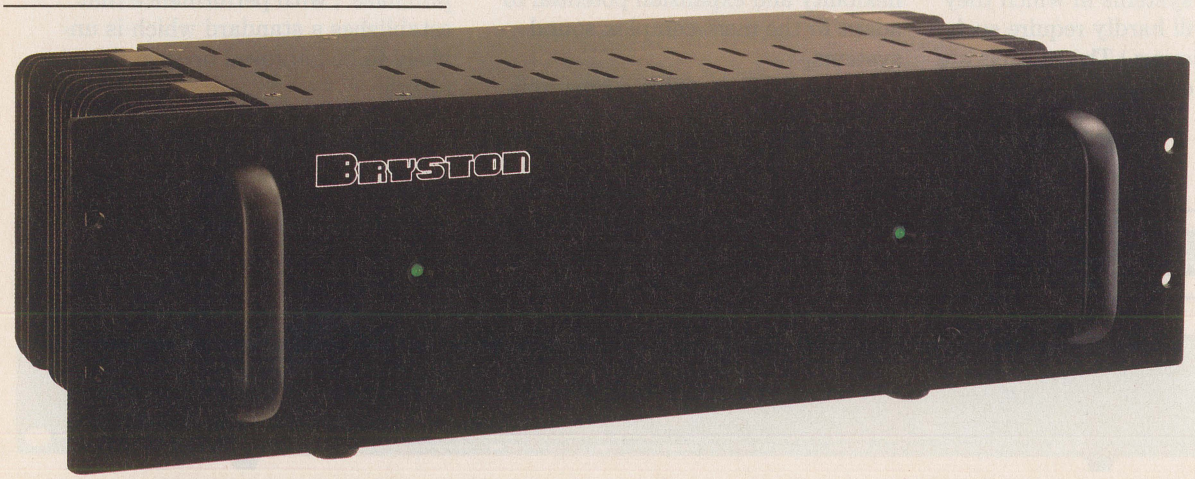
MODEL 2B LP

Bryston's first exploration into audio, over a decade ago, was a power amplifier intended to prove our theory that amplification which was free of cost-cutting compromises, which displayed excellent open-loop linearity, would be audibly superior to amplification which obtained good numerical specifications from a compromised circuit by virtue of large amounts of feedback. This was, at that time, an almost heretical idea. Long term comparison tests were run at a large recording studio, using the biggest and best-known amplifiers of the day. The result was that the studio ordered Bryston amplifiers for its monitor systems, although they were hardly more than breadboard prototypes at the time. Even in this rough form, Bryston's linearity proved audibly cleaner and more musical than the most respected products on the market. Clearly here was the beginning of a trend. Bryston has expanded on this theme ever since.

Included in our original theory were a number of design factors; independent power-supplies, very high output current capability, voltage-gain in the output section, and several other approaches intended specifically to linearize the open-loop gain, including complementary output circuitry. (Complementary means employing opposite polarities of transistor on opposing halves of the waveform. Quasi-complementary employs the same polarity of output device on each half, and requires a signal phase reversal to drive one side, compromising linearity). These advances are still in use in all Bryston amplifiers. In addition, we have expanded our concept of full complementarity to include all stages, and have adopted a novel output section which is actually quad-complementary. This new output section, which employs both polarities of transistor on each half of the output drive circuit, yields a dramatic improvement in linearity and musical accuracy. This is reflected in extremely low distortion figures, obtained without massive amounts of feedback. I.M. distortion, which we feel is an excellent indicator of an amplifier's steady-state accuracy, is so low as to be nearly impossible to measure.

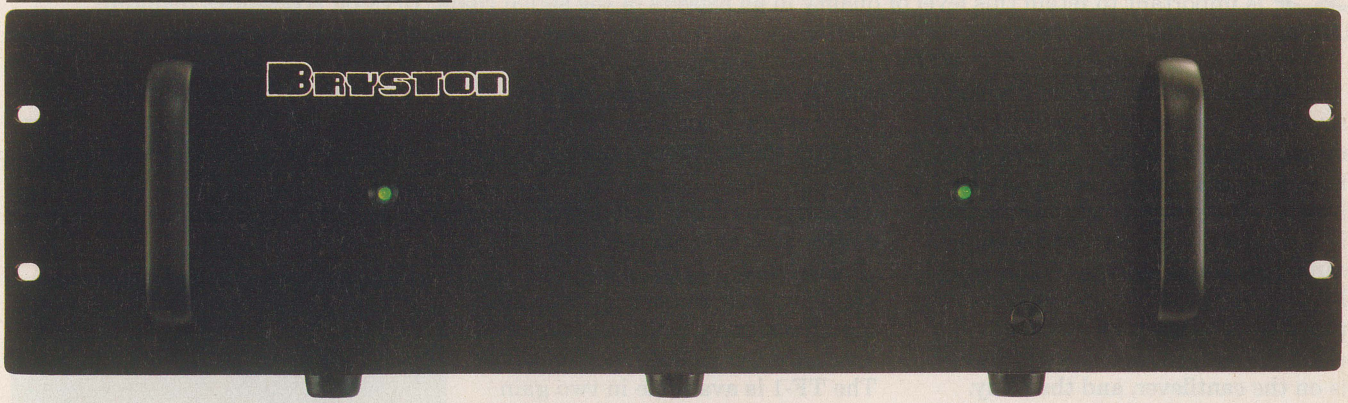
Further solidifying Bryston's low-open-loop distortion philosophy, we select and match all input transistors to less than 1% tolerance, employ only metal-film resistors, use polystyrene capacitors in signal-path circuitry. Finally, we hand adjust each and every amplifier to the absolute optimum performance.

MODEL 3B



POWER AMPS

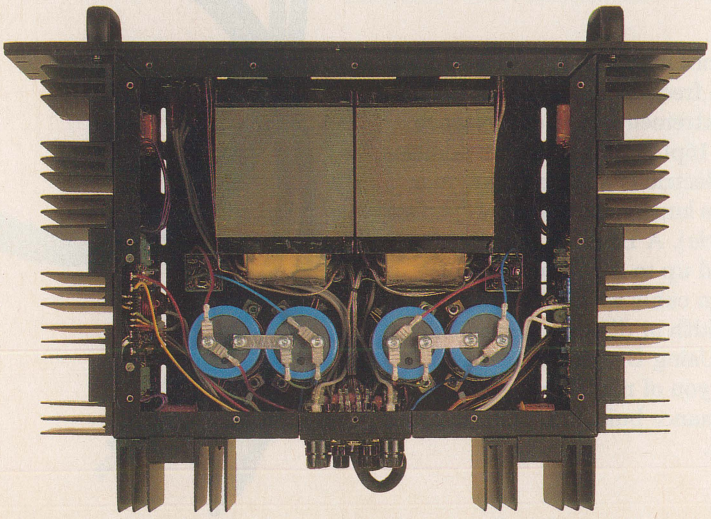
MODEL 6B



Of course, the proof is in the listening. Bryston sells over half of its production to professionals. We find that professionals are first attracted to Bryston by its reputation for reliability, but they are convinced by its sonic quality. The recording and broadcast industries, motivated by recent developments in low-distortion, wide range source material, have become very sophisticated, even audiophile-oriented. Bryston products have become so popular among these groups that there is an excellent chance that your favorite recording was monitored on Bryston equipment at the studio and later transmitted from stations using the same Bryston components on their monitors. Our reliability is so well-known that many touring bands use Brystons on the road as well. In fact, you could be listening to a Bryston chain all the way back to the amplified instruments themselves.

The reliability to which we referred above is not a matter of luck. It is our scientific application of proven methods. We use statistical mean-time-before-failure analysis, studies of stress on component longevity, vibration-resistance in attachment methods, even the metallurgy of, and oxygen-exclusion in, electrical connections. We know how to make a product fool-proof, and we know how to test for potential problems. Every amplifier Bryston makes is connected to a very high-stress combination of load and signal, which engages the protection mechanisms continuously. They are "burned-in" this way for more than 4 days: 100 hours. Although nearly all pass this test without incident, the point is, we don't want you to receive the one which might not have.

MODEL 4B



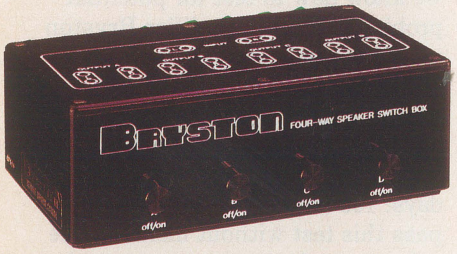
DUAL POWER SUPPLIES

All Bryston amplifiers, from our 50-watt per channel 2B, to the blockbuster 6B at 800 watts into 1 or 4 ohms, employ separate power supplies for each channel. Each supply could be capable of powering both channels to their full 8 ohm specifications. Keeping the power separate, however, yields a worthwhile, even dramatic improvement in image firmness and overall clarity. This is because the channels cannot develop any cross-talk or intermodulation through the power-supply.

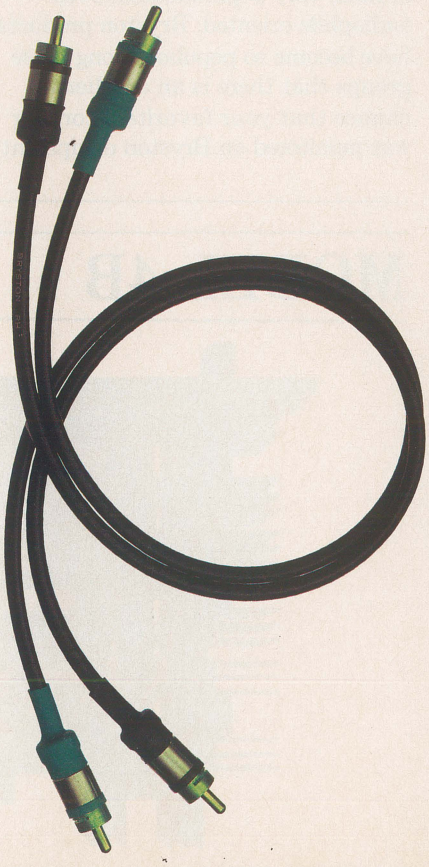
ACCESSORIES

Bryston believes that equipment which sounds cleaner will measure better, and vice versa. That's why we build all our components with the best materials and the most performance-effective technology. We feel it is important to retain this level of quality in all aspects of the signal chain. Bryston accessories maintain this link without compromise.

Moving coil cartridges display several sonic advantages over moving magnet type cartridges. The primary reason is that the magnet structure is many times larger, since the magnet is stationary, not a part of the tiny cantilever which traces the groove. A larger magnet allows more signal power to be generated, at lower electrical distortion, but since the coil is on the cantilever, and thus tiny, the voltage is lower. (The current, of course, is much higher). Since current can be transformed into voltage, a transformer is the ideal way to capture the improved signal-to-noise ratio this high signal-power allows. The Bryston TF-1 transformer will deliver a signal from your moving-coil cartridge to your phono pre-amplifier with lower noise and lower overall distortion at these small signal levels, than any active step-up device. The TF-1 is available in two gain configurations, (16.5 or 22.5dB), and is internally restrappable. It is identical to the internal moving-coil stage in the Bryston 12B, and is an ideal match to the .5B, or to any preamp which requires a flawless moving-coil interface.



The Bryston line of speaker switchboxes uses massive switch assemblies, which stand up to the high current capabilities of Bryston amplifiers. High pressure contacts maintain ultimately low contact resistance, and gold-plated input and output connectors assure a distortion-free interface between amplifier and loudspeaker. Separate grounds between channels allow the use of bridged amplifiers. Models are available for 2 speakers plus headphone, 3 speakers plus headphone, and 4 speakers. If you require speaker switching, don't use just "any" switchbox; use a Bryston to maintain the clarity and musical accuracy of your system.



In cable interconnects there are 4 basic parameters which can affect waveform accuracy; contact linearity, cable resistance, capacitance, and inductance. Contact linearity is a function of corrosion in the connection, which can be completely prevented by the heavy gold plating used in all Bryston connectors, since gold is an inert metal.

The cable resistance and inductance of normal interconnect wires are negligibly low in relation to the source and input resistances they contact, but capacitance can affect performance since it acts as an increasing load at high frequencies. Bryston cables have extrememly low capacitance (about 15pf per foot), and in addition, the dielectric is a foamed polymer, which is largely air, (the only "perfect" dielectric). A Bryston preamplifier can feed up to a quarter mile of Bryston cable without changing its bandwidth or distortion specifications. Using Bryston cables will assure you of maintaining all the performance built into your Bryston system.

BRYSTON

Specifications: 2B-LP, 3B, 4B and 6B power amplifiers

DISTORTION:
Harmonic:
Less than 0.01% (for 6B 0.02%) from 20 to 20kHz at rated power.

IM:
Less than 0.01% from 10 milli-watts to full rated power.

Noise:
100 db below full output.

Crosstalk:
Below noise 20 to 20kHz.

SLEWING RATE:
Greater than 60 volts per microsecond.

POWER BANDWIDTH:
Less than 1 Hz to over 100kHz.

DAMPING FACTOR:
Over 500 at 20 Hz, ref. 8 ohms.

INPUT SENSITIVITY AND IMPEDANCE FOR 2B-LP, 3B, 4B RESPECTIVELY:

.75 volt in for full output 50 k ohms.

1 volt in for full output, 50k ohms.

1.25 volts in for full output, 50 k ohms.

FEATURES:
1. Bridging switch.
2. Regulated power supplies.
3. Each channel separated back to the linecord.
4. Dual-colour LED pilotlights and clipping indicators; green changing to red at clipping.
5. Will deliver full output to any phase angle at 4 ohms or higher.
6. Warranty: 5 years parts and labour, shipping one way.

BRYSTON 2B-LP

Basic Stereo Power Amplifier
50 watts per channel, 8 ohms.
100 watts per channel, 4 ohms.
200 watts, bridged, 8 ohms.
Over 1600 cm^2 of heat-sinking; (over 3200 cm^2 with chassis).
19" x 1.75" x 10", wt. 18 lbs.
48.25 cm x 4.44 cm x 25.4 cm, wt. 8 kg.

BRYSTON 3B

Basic Stereo Power Amplifier
100 watts per channel, 8 ohms.
200 watts per channel, 4 ohms.
400 watts, bridged, 8 ohms.
Over 3200 cm^2 of heat-sinking; (over 6400 cm^2 with chassis).
19" x 5.25" x 9", wt. 35 lbs.
48.25 cm x 13.33 cm x 22.85 cm, wt. 16 kg.

BRYSTON 4B

Basic Stereo Power Amplifier
250 watts per channel, 8 ohms.
400 watts per channel, 4 ohms.
800 watts, bridged, 8 ohms.
(More than 1 horsepower).
Over 6400 cm^2 of heat-sinking; (over 9600 cm^2 with chassis).
19" x 5.25" x 13.5", wt. 50 lbs.
48.25 cm x 13.33 cm x 34.3 cm, wt. 23 kg.

BRYSTON 6B

Basic Mono Power Amplifier
Rated Distortion: Less than .02% I.M. or THD from 20-20 KHz at rated power or below.
Rated Power: 500 watts 8 ohms
800 watts 4 ohms
500 watts 2 ohms
800 watts 1 ohm

6400 cm^2 of heat sinking, etc.

19" x 5.25" x 13.5", wt. 50 lbs.
48.25 cm x 13.33 cm x 34.3 cm, 23 kg.

Specifications: .5B, 11B* and 12B preamplifiers

DISTORTION:
(Any Input, to any Output); Less than .005%, IM or THD, any Frequency from 20-20KHz, at rated output or below.

Rated Output:
10 volts RMS minimum, from Tape or Main Output. (Typically 14 volts RMS available).

Rated Noise: (input shorted)
Phono; —80 dBA Referred to an input of 5 millivolts RMS @ 1KHz.
High Level inputs; —95 dBA referred to an input level of 500 mv at 1 KHz.

RIAA Accuracy:
Within less than ± 50 mB (.05 dB) from 20-20KHz inclusive.

Frequence Response:
High Level Section; within less than ± 50 mB from 20-20 KHz inclusive.

*without MC Transformer.

12B MC Transformer Section

DISTORTION:
Less than .005% 20-20 kHz with preamplifier driven to full rated output.

Noise:
Equivalent to approximately 1000 ohm metal film resistor (Thermal noise greater than —85 dB below 0.6 mv input, **unweighted**).

Gain:
16.5 or 22.5 dB (internally re-strappable).

Frequency Response:
Below 5 Hz to above 30 kHz, within less than ± 0.5 dB.

Not Evolutionary, Revolutionary.

Pioneer's Revolutionary CD/LaserVision Player

If there was ever a machine ahead of its time, it's Pioneer's new CLD-909. The most remarkable machine ever invented to play compact discs, LaserVision discs and music video discs.

No longer need you buy two machines to get the best of both sight and sound. The CLD-909 does it all. And does it beautifully.

The CLD-909 represents a stretch of the engineer's imagination. It incorporates a number of technological breakthroughs. One is a laser pickup/objective lens system with the smallest aperture yet—0.55 microns. That's one thirty-four hundredths the diameter of a human hair. It takes this kind of incredibly fine laser focus to read the density of information encoded on CDs and LaserVision discs. Another is a newly-developed Constant Distance Tilt Servo that maintains high trackability even on severely warped discs.

It is this kind of advanced technology that lets the CLD-909 deliver a picture 20% sharper than live broadcast television. And 60% sharper than the latest VHS HQ VCRs.

Getting the picture? It's so sharp and accurate and faithful to life that things appear almost 3-dimensional. And unlike videotapes, optical discs don't wear out. They also give you random, immediate access to any frame or time point. Impossible with tape.

And what convenience and versatility. You can program the CLD-909 to play audio or video tracks in any order you wish. You can repeat programs, segments, or entire sides. The possibilities are just about endless.

The CLD-909 includes many highly sophisticated features. Like automatic disc and digital sound detection, semi-automatic front loading, subcode output, on-screen programming, as well as on-screen function display. It is fully remote-controllable for stand-alone or system use, and has a built-in computer control port. We've also designed a new CD Motor *Swing Assembly* that lets us make the CLD-909 just 4.7 inches high. Then we added sophisticated electronics like a new Pulse Count IC and Noise Canceller to achieve a remarkable horizontal resolution of 400 lines.

The CLD-909 gives you breathtaking digital audio to match its breathtaking video. From compact discs, of course, as well as many 12-inch LaserVision discs and 8-inch music video discs. And Pioneer's exclusive Linear Servo system accurately reproduces music from even warped, scratched or dirty CDs.

Pioneer's revolutionary CLD-909. More than just a new idea. It is without a doubt the finest source of sight and sound you can possibly own. See it at your Pioneer Dealer. Or call 1-800-421-1404.

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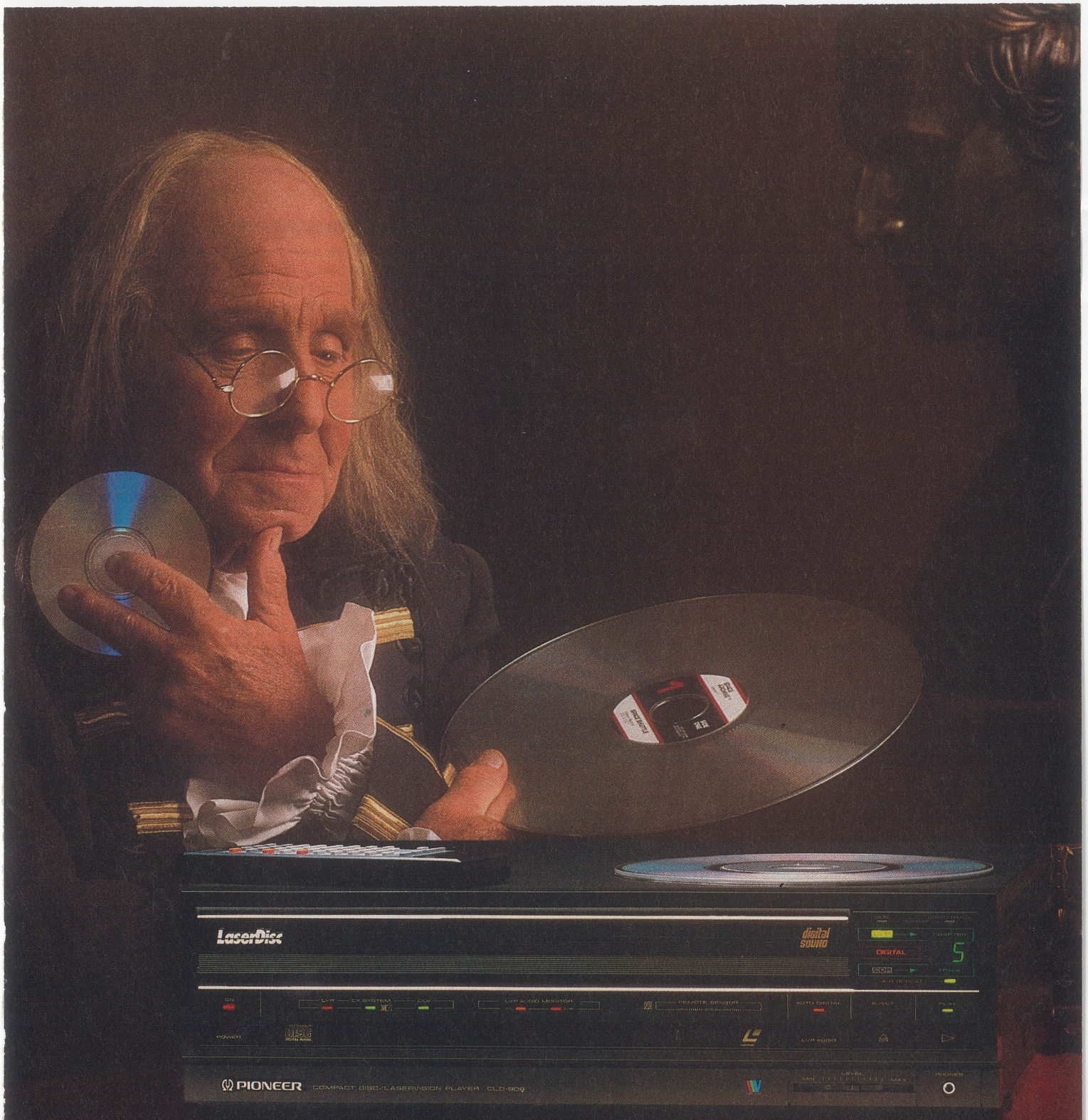

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EDWARD TATNALL CANBY

SPECIAL-INTEREST LOBBY

Illustration: Debra White

Do we still need the live musical experience as a basis for our audio entertainment? You bet. All kinds, but especially in lobbies.

A long while ago I conducted a concert with my New York singers out at a university in New Jersey. When we arrived we found we had to sing in a lecture hall, one of those padded-cell affairs with low ceiling and soundproof walls. But just outside this monstrosity (for music) was a large entrance foyer or lobby, all stone and concrete, extending up through several floors with intertwined stairways. Instantly I knew it was a natural place for music, intended or no. It would be glorious, like St. Mark's Cathedral. So in desperation I asked if we could remove our concert to that space.

What? A concert in the *lobby?* That's no proper place for a cultural event! We were refused, and we sang in the padded cell. Dreadful concert.

This year, at last, I have been vindicated, if indirectly. I am back from my annual live-music Jacuzzi in Oregon, a whirlpool of glorious sound in which I bathe, three concerts a day for several weeks, and never fail to find further clues to understanding our own ever-changing audio entertainment. This year in Eugene we had real lobby concerts—a whole series.

This year's special lobby concerts were entirely outside Silva Hall, the electronic concert space about which I wrote at length in 1983 (see *Audio*, October, November and December 1983). They were in the foyer of the same building, a place which, as far as I know, was never intended to be more than a visually magnificent entranceway. But a while back somebody with a better musical ear than the architects got the idea of putting music into that big space, just as I had, back in New Jersey. The results were so good that for 1986 a whole series of free public concerts was set up, every other weekday at noon—just to show the Eugene people what this remarkable place can do, even outside its concert hall. Plenty of variety: Two jazz concerts, Romantic chamber music with piano, a loud brass quintet, a batch of Baroque sonatas with harpsichord. At the biggest concert the surprised management made an on-the-spot attendance count—some 862 sat and stood in that big space. Guess which concert? No, not the jazz or the brass. The Baroque sonatas with harpsichord. *In the right situation*, anything goes. Don't dare think that this is any less true for audio entertainment.

Silva Hall remains today a state-of-the-art example of electronically assisted architectural acoustics, planned from the start to combine natural and electronic reverberation into one sound, indivisible, yet variable via computer control. Very controversial, of course—especially in the music world, where any kind of loudspeaker sound brings thoughts of canned music *à la* James Petrillo.

To recapitulate, there are three electronic systems in this hall. Two are for hall acoustics (that is, reverb) and the third, a standard type, is for normal stage sound reinforcement, all kinds. One reverb system, Assisted Resonance (AR), is interconnected with another one that is quite different, Electronic Reflected Energy System (ERES). Both of them are highly sophisticated and complex but low in level, affecting only the reverberant characteristics of the hall and not conspicuously audible to the audience. These two systems were assembled in Silva Hall by acoustic designer Christopher Jaffe of Norwalk, Connecticut and his associates. Jaffe himself designed ERES, as well as the installation's interconnecting computer controls; AR comes out of England (it was first designed for the Royal Festival Hall), from the Acoustical and Investigation Research Organisation.

AR is tailored to fit each hall, installed on the spot and tuned to working order with the aid of British technicians. Then the whole shebang is left to the local operators, just as the building architect and contractors leave the physical hall itself. AR comprises an astonishing overhead array of some 90 loudspeakers in a band across the curved Silva ceiling, fed individually by another overhead band of 90 microphones, each one sharply tuned in a Helmholtz resonator to a very narrow band of frequencies.

The system uses carefully controlled feedback loops, band by band to regulate the "die-away" time at each speaker, and en masse to regulate the overall sound as the combined reverb fades away. It is really breathtaking.

ERES is a very different system based on selective delay lines out of a

Continued on page 131

THE 800 SERIES MASTER MONITORS

LISTEN AND YOU'LL SEE

801's at a Deutsche Grammophon digital recording session in the Kingsway Hall, London.

801's pictured here in the Decca digital suite, London.

801's in the celebrated EMI Abbey Road studios, London.

Top-of-the-line models 801F, 802F, 808 and the new MPA810 power amplifier: at the fore-front of sound reproduction technology. Used by digital recording studios worldwide and soon, we hope, by you.

Enter No. 21 on Reader Service Card

1966 B&W 1986

B&W CELEBRATES 20 YEARS OF THE QUEST FOR PERFECTION

The inspiration behind B&W was, and still is, that of John Bowers — creator, engineer, music-lover and perfectionist. B&W is a personal dream that became an internationally respected company.

Twice the winner of the Queen's Award to industry and designer of numerous award-winning and trend-setting loudspeaker models, B&W still remains committed to the goal which was the impetus for its founding: the most faithful re-creation of music possible. For while John Bowers and his B&W team enjoy the great respect of the audio industry, they have as many admirers and friends among the world's top professional musicians, conductors and recording engineers. That, perhaps better than any other accolade, attests to the quality of every B&W design.

Today the B&W sound quality is legendary, and extends from the professional monitor models 801F and 808 to a range of products to suit virtually every application. The affordable 100-series of Digital Monitors, the Video Acoustical Monitors, Professional Amplifiers, Active loudspeakers and a complete range of Automobile loudspeakers, all reflecting the "Quest for Perfection" which motivated B&W's beginnings 20 years ago.

"My own critical standards when listening to music have always been exacting. have never expected those of B&W customers to be less so." John Bowers
Founder and Managing Director, B&W Loudspeakers

The world's audio press tells the story:

Model P2 (1966) "... for this loudspeaker with its broad and balanced polar response, its linear and extended frequency response is approaching the ideal everyone is seeking — perfection."
John Gilbert, **Gramophone** (U.K.)

Model 801 (1979) "In simplest possible terms, the 801 is among the handful of great loudspeakers available."
High Fidelity (U.S.A.)

Model DM6 (1975) "... the overall impression left after many weeks of listening is predominantly one of satisfying, untiring natural sound, without any distracting feature which could be termed a flaw."
Trevor Atwell, **Hi-Fi News** (U.K.)

Model 808 (1984) "It is difficult to describe how one gets caught up in the music, how the climaxes of a Mahler symphony, for instance, afford an emotional impact that can truly be described as uplifting... There is no doubt that the B&W 808 is a major achievement in advanced speaker design."
Bert Whyte, **Audio** (U.S.A.)

Active 1 (1985) "The John Bowers Active I certainly measured like a fine speaker, and we are happy to report that it sounds as good as its measurements imply-beautifully balanced and uncolored... The bass output from the two 6-inch drivers... compares very well with the output from good 12-inch woofers in cabinets at least twice the size of the Active I."
Julian Hirsch, **Stereo Review** (U.S.A.)

1966 B&W 1986

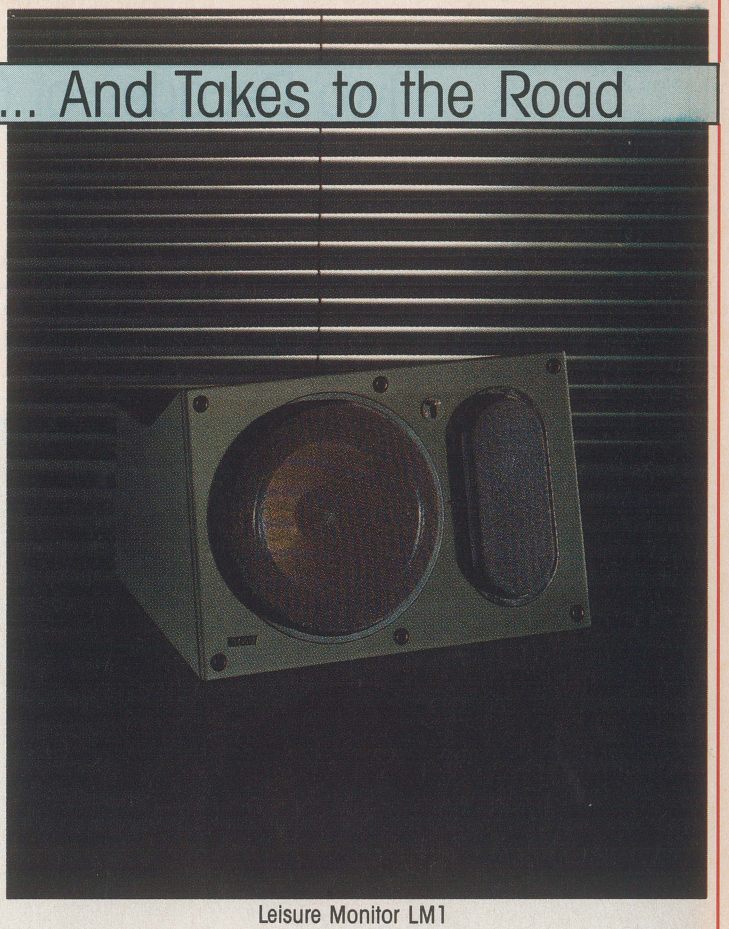
B&W Hi-Fi Leaves Home... And Takes to the Road

The beginning of this decade saw the logical extension of home hi-fi into the automobile, with sophisticated audiophiles seeking performance standards on a par with those of their high-end domestic systems.

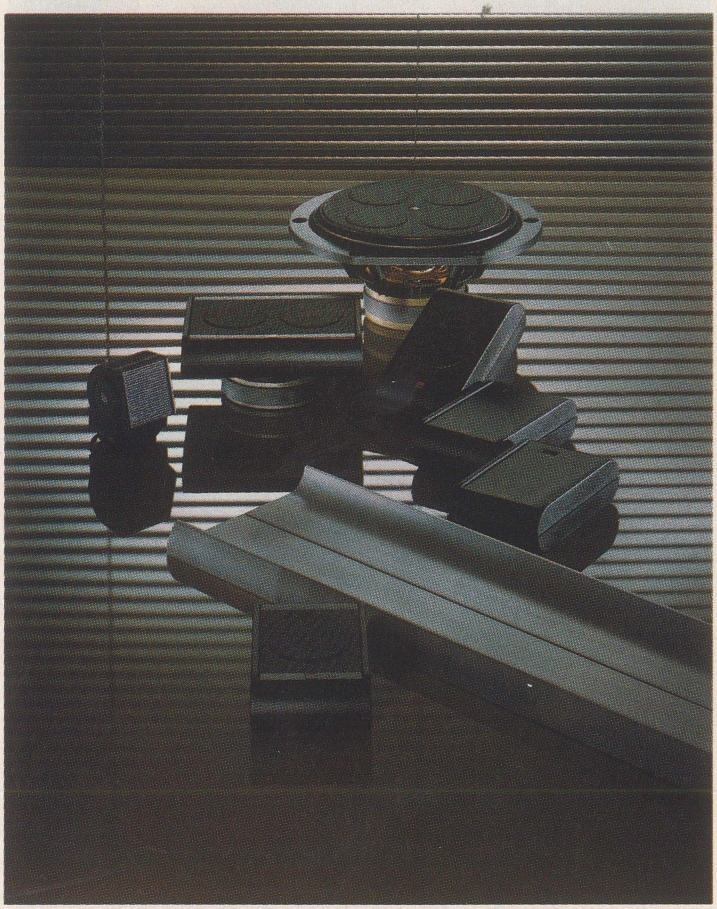
B&W responded to the challenge in 1982 by introducing their LM1 series of Leisure Monitors. For many LM1 provided for the first time an opportunity to have quality hi-fi in the automobile.

The enthusiasm with which LM1 was received led to the introduction of MASS — B&W's Modular Automobile Sound System — in 1985. Comprising 8 interlinking modules, MASS combines B&W's world-famous sound quality with system flexibility, high sensitivity and a wide range of installation options.

MASS provides a refined solution to the problems of critical in-car listening, maintaining the highest performance standards while overcoming installation limitations, off-axis listening positions and adverse climatic conditions. Such refinements as B&W's APOC (Audio Powered Overload Circuit) to protect the drive units and the unique dual-action swivel mount of the LT40 tweeter (based on the famous TXS26 high-frequency driver used in studio monitor 801F) are just some of the technological advances made with MASS.



Leisure Monitor LM1

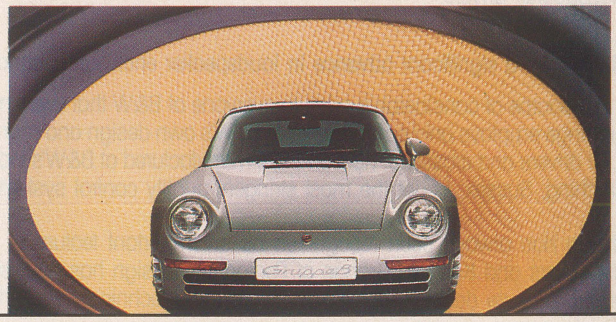


Eight associated modules form MASS

The Kevlar Cone

Kevlar — DuPont's aromatic polyamide fibre — is vastly superior to conventional loudspeaker materials and particularly suited to automobile loudspeaker applications. Kevlar's combination of high stiffness and low mass had proved its sonic superiority through use in the all-important midrange driver of the 801F. Its extremely low mass is particularly critical for automobile applications where high sensitivity is an important criterion given the lower power output of most car audio amplifiers.

Easily capable of withstanding temperature extremes and high humidity, Kevlar will not be affected by the adverse conditions inherent in the automobile environment. Initially developed for bullet-proof vests Kevlar is used today for racing cars, yachts, and many other high-performance products where the weight-to-strength ratio is critical, such as the Porsche 959 which must be a prime example of today's technology ahead of its time.



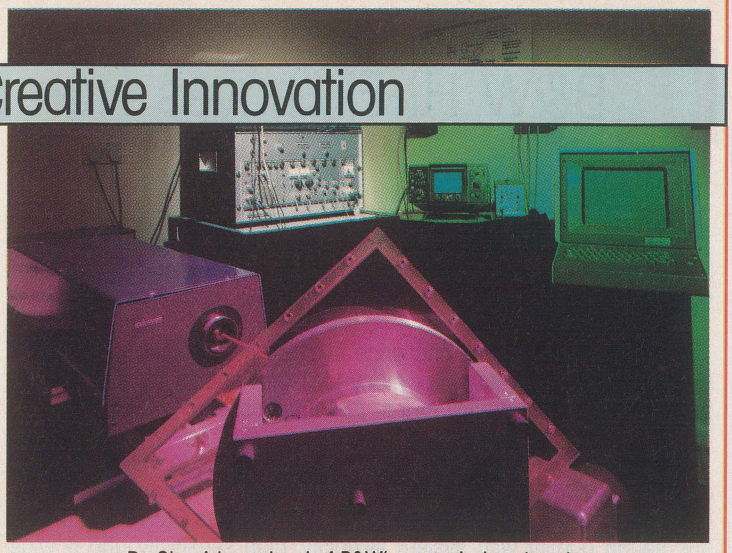
Kevlar cone & Porsche 959

1966 B&W 1986

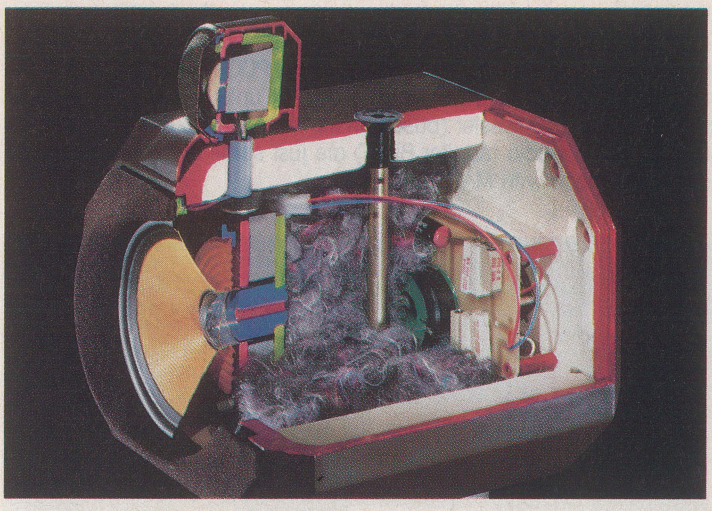
Two Decades of Creative Innovation

In his heart John Bowers is an engineer and designer, and his engineering creativity has directed B&W's policy from the very beginnings of the Company. This dedication has made B&W one of the most research-oriented companies in the audio industry, and their Steyning Research Establishment is among the most advanced acoustical laboratories in Europe.

Steyning Research Establishment



Dr. Glyn Adams, head of B&W's research department, pioneered a technique for monitoring the vibrational behaviour of loudspeakers using lasers.



The Fibrecrete lining of its midrange head assembly is one of the important reasons for B&W 801F's superior performance.

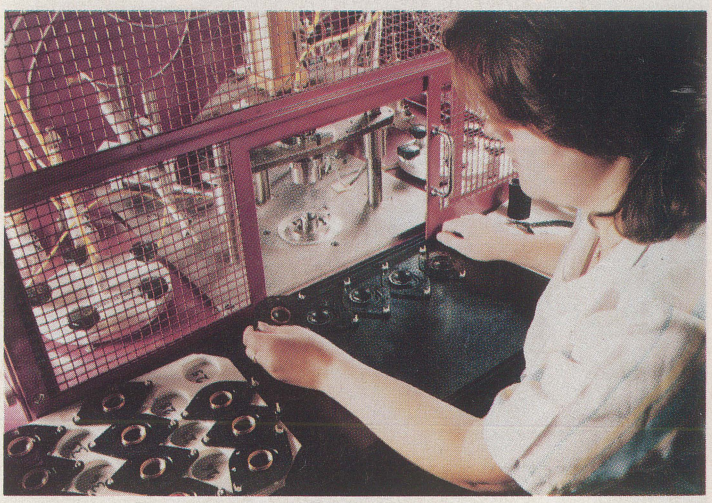
Although equipped with some of the most modern and sophisticated tools available, it is the Steyning Research Establishment's engineering team which is B&W's greatest asset. Their creativity over the last twenty years has pioneered a number of industry milestones:

- a calibration certificate included with every production loudspeaker
- digital testing for quality control in production
- incorporation of electronic overload protection circuits
- first to use Kevlar for loudspeaker cone construction
- first in Europe with a linear-phase loudspeaker — DM6
- first with computer optimisation for crossover design
- first to use composite enclosure techniques employing Fibrecrete bonded to structural foam
- first to employ laser interferometry to study the vibrational behaviour of loudspeaker drivers.

... and in 1986...
MATRIX — a significant advance in loudspeaker enclosure technology.

It is a source of considerable pride to everyone at B&W that every model in the range employs only components of B&W's own design and manufacture. All drivers and crossover networks are manufactured at B&W's facilities in Worthing, Sussex, under the most stringent quality control systems.

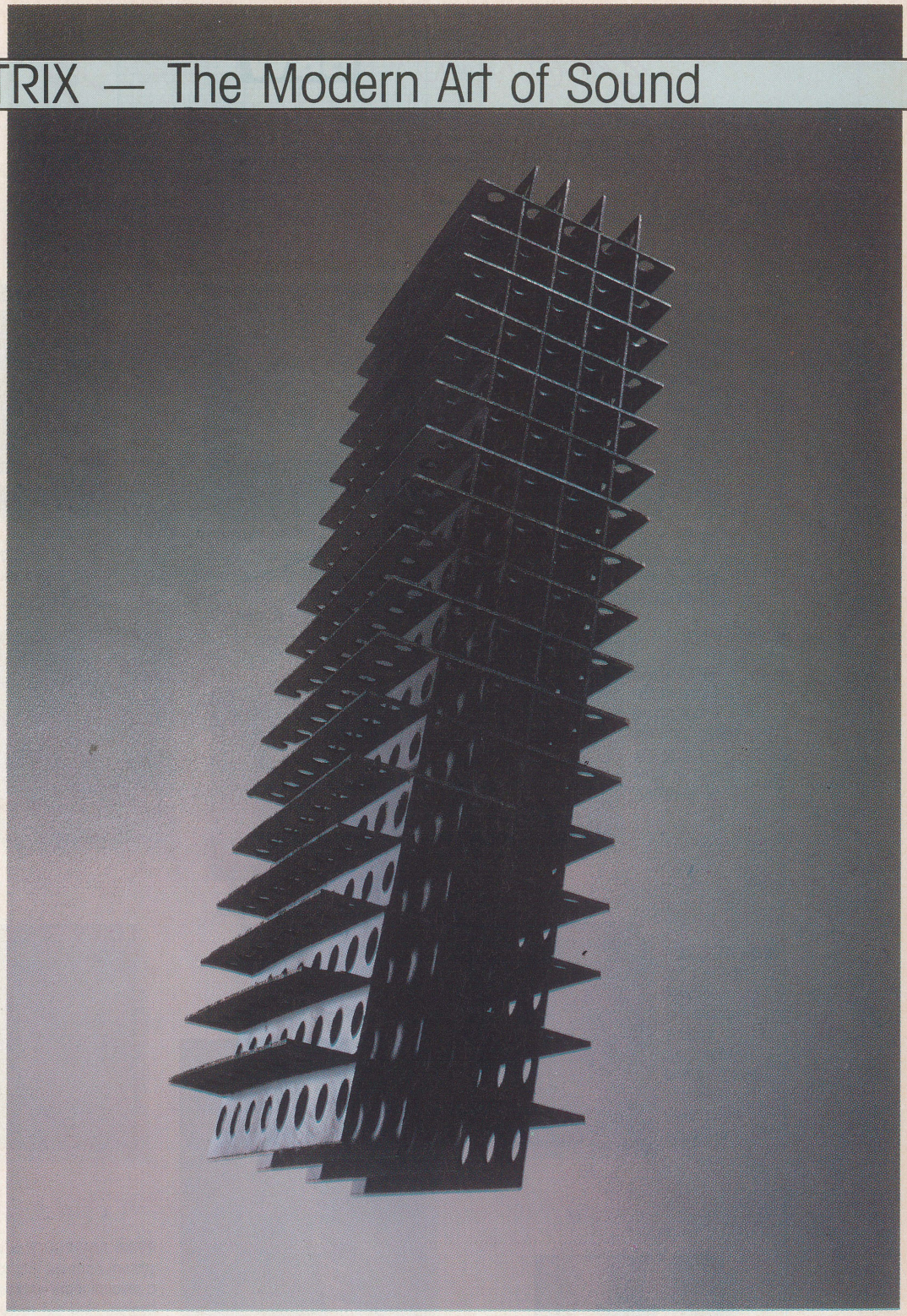
Styling has always been recognised as an important feature of B&W loudspeakers and Kenneth Grange of Pentagram Design has consistently created enclosure designs which complement the technical excellence of the loudspeakers.



B&W's automated tweeter assembly. Technology in the service of music.

1966 B&W 1986

MATRIX — The Modern Art of Sound



In loudspeaker design, as in other technologies, the frontiers of what can be accomplished are pushed back gradually in an evolutionary process of development. Occasionally, however, a breakthrough of major proportions is made. B&W MATRIX★ is just such a breakthrough.

Whilst steady progress has been made in the development of new and better drive units, until recent years little attention has been paid to the actual enclosure housing these drive units. Because of its importance to loudspeaker performance, B&W instigated a research programme on enclosure design three years ago, embracing a wide range of materials including the so-called Aerospace materials, "Sandwich" construction and even concrete. Despite the extravagant claims made for these materials, B&W's research showed that in some respects they were inferior to a conventional enclosure. B&W therefore invented MATRIX.

The MATRIX enclosure comprises an inner honeycomb structure bonded to the outer skin of the cabinet and filled with sound absorbing foam. The enormous stiffening provided by this structure virtually eliminates enclosure radiation at low and mid frequencies, with the additional damping providing a similar effect at high frequencies. The cellular foam configuration almost completely absorbs rear radiation by the driver.

Of equal importance is the "Time History" — the time required for the sound to decay. MATRIX scores equally well on this count, minimizing "hang-over" inherent in less sophisticated loudspeaker enclosures.

The B&W MATRIX series of Digital Monitors has been designed for the age of the compact disc, with all the additional requirements this source material places on the loudspeaker system: increased dynamic range, increased transient information and a lower noise floor.

Having designed a near-perfect enclosure B&W developed totally new and improved components to complement their invention. Homopolymer Polypropylene cones (almost twice as stiff as Copolymer Polypropylene used by other manufacturers), a totally new Ferrofluid cooled tweeter giving 8dB increased dynamic headroom at high frequencies and a crossover network providing a new standard for low distortion and resistive amplifier loading.

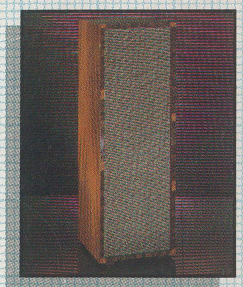
B&W have published a complete "Design Story" on the MATRIX series of Digital Monitors, including research results from the three-year design programme. Write to us for your copy, or visit your local authorized B&W dealer.

★B&W MATRIX is a trademark of B&W Loudspeakers Ltd.

1966 B&W 1986

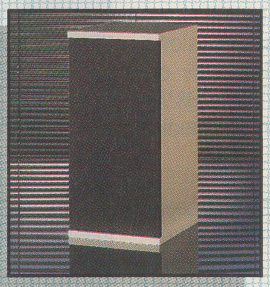
1966 B&W 1986

MILESTONES



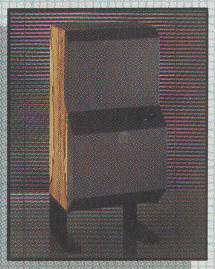
1967 P2H "Approaching the ideal everyone is seeking - perfection."
JOHN GILBERT, GRAMOPHONE

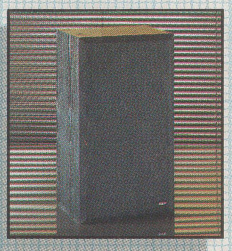
1970 DM70 When launched Funk-Technik (Germany) said: ". . . a milestone of development for the next decade."
Time proved them correct.



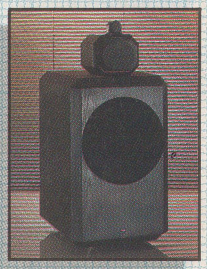
1972 DM4 Increased B&W's export tenfold in five years winning a second Queen's Award.

1975 DM6 Europe's first linear phase system and the first to use Kevlar in cone construction.



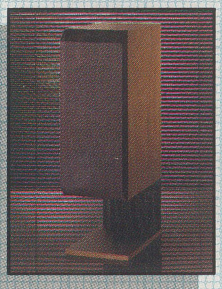


1983 DM110 Pop, jazz, rock, classical – total spectrum capability from this popular and 'affordable' Digital Monitor.

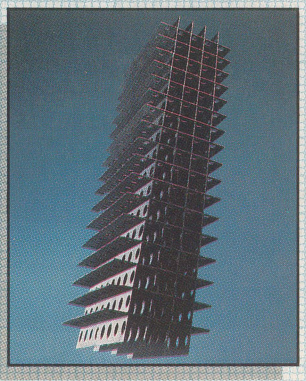


1979 801 B&W's first professional monitor loudspeaker. Now selected worldwide as classical music monitor by all major recording labels.

1984 ACTIVE 1 B&W's first electronic loudspeaker system. Originated, designed and produced completely in-house.



1984 808 Reproduction to full reference standards – perfection to 120dB.



1986 MATRIX This unique system concept incorporates a revolutionary enclosure design. Find out more from your B&W stockist.

Two decades of creative innovation, of setting the standards in advanced loudspeaker design. Constantly pushing at the frontiers of sound technology.
The B&W quest for perfection continues.

20 Years Of Sound Technology

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B&W
LISTEN AND YOU'LL SEE

Continued from page 124

An architectural accident, the lobby's acoustics are marvelous no matter where you sit, from the floor all the way up to the vertiginous heights.

single mike, usually hung at the top of the proscenium arch. It feeds other strategically placed loudspeakers to provide, first, the essential 20-mS delay that we now know is necessary for a sense of stage presence in music, and second, a variable set of electronically simulated "walls" to define the shape and size of the audible space wherever one may sit.

Absolutely none of this apparatus is visible to the audience, thanks to a "false" or hung ceiling (its parameters, of course, very carefully calculated for acoustic effect) and a tall, black proscenium arch that is actually made of a sound-transparent scrim behind which are more speakers and other nonstructural items in profusion. A triumph of artifice, yet it looks solid and real—visually a pleasure (except when someone accidentally leaves a light on behind the scrim, showing all, as happened this year). This trumped-up architecture (with the "real" structure hidden behind) is, you might say, a visible ambience to match the audible, and surely no more "fake" than a thousand modern office buildings.

The hall is deliberately informal, in contrast to many—a preposterous, upside-down, green and yellow fruit bowl in lush basket weave fronted by an enormously wide and deep stage, an invitation to sonic disaster if it were not for the electronic compensations. The cool, fresh hall colors blend at the rear into darkened, burnt-ochre hallways which open out into the astonishing lobby, full of light and air. I love the whole place.

That lobby, ". . .an airy assemblage of incredibly tall, peaked roofs in wood and glass, touched up inside with lofty balconies at many levels joined by stairs paved in apple green floral carpets," I wrote in 1983, was then just a lobby. Now the space is a concert hall too, willy-nilly and by happenstance. It is huge, this lobby, a sheer architectural fantasy, thrilling to pass through as an entrance and exit to the hall itself. But its tall wood pillars, 60 feet unbroken, the great glass expanses looking out onto sky and clouds and trees, different on every occasion and from moment to moment in sun, shade and nighttime, are too splendid for a mere lobby. Something had to happen.

And so the paradox: All that fancy audio equipment inside, all those specially calculated walls and ceilings and computer controls—and in the lobby, nothing. Nothing, that is, acoustically speaking. This leads to some faintly comic aspects when the unforeseen audience convenes. Inside the hall the ventilation and air conditioning is faultless in utter silence. But out in the lobby there is a vast rumbling of machinery, not at all soundproofed. You were just supposed to walk through, or stop and gab with friends while drinking champagne (on sale over to one side). The lobby ventilation with an audience on hand is, alas, minimally effective. It does get a bit warm, especially in the high upper balconies, after a half hour or so. I doubt if much can be done, but no sweat; if you are warm you can always descend to a lower level, any time. There is constant movement, around and about, as the music plays.

For an architectural accident, the lobby acoustics are marvelous no matter where you sit—on the central floor, where the musicians now play in a space set off by low, moveable walls, or all the way up in the vertiginous heights of the top little balcony, hung in space as though weightless. It takes a certain amount of nerve to climb that high, so dramatic is the downward view directly above the musicians, so perilous seems the suspension. The music is reflected everywhere; the rounded side walls, the great areas of vertical glass, and the tall diagonal peaked roofs catch the sound and toss it sidewise. No matter where you go you can hear beautifully.

But you should *see* these concerts! They are totally informal, though nobody said they had to be, simply because of the place itself, a glorified indoor musical picnic spot and a fine springtime advance upon our usual outdoor, blankets-on-the-grass, summer concerts. Babies crawl busily, small kids run about or do solo dances on the soundless carpeting, families sit massed on the lush green stairways, leaving a narrow space at the side for those on the move, they eat lunch (as I did), knit sweaters, hold hands, snooze luxuriously or watch the clouds go by outside. Mothers run out to retrieve infants on the loose, kids edge closer and closer to the musicians to see how they work, college students in shorts climb the heights or sit lotus-like or carry tennis rackets, backpacks, whatever. It's Americana, an entertainment style that is peculiarly ours. No wonder it was a success.

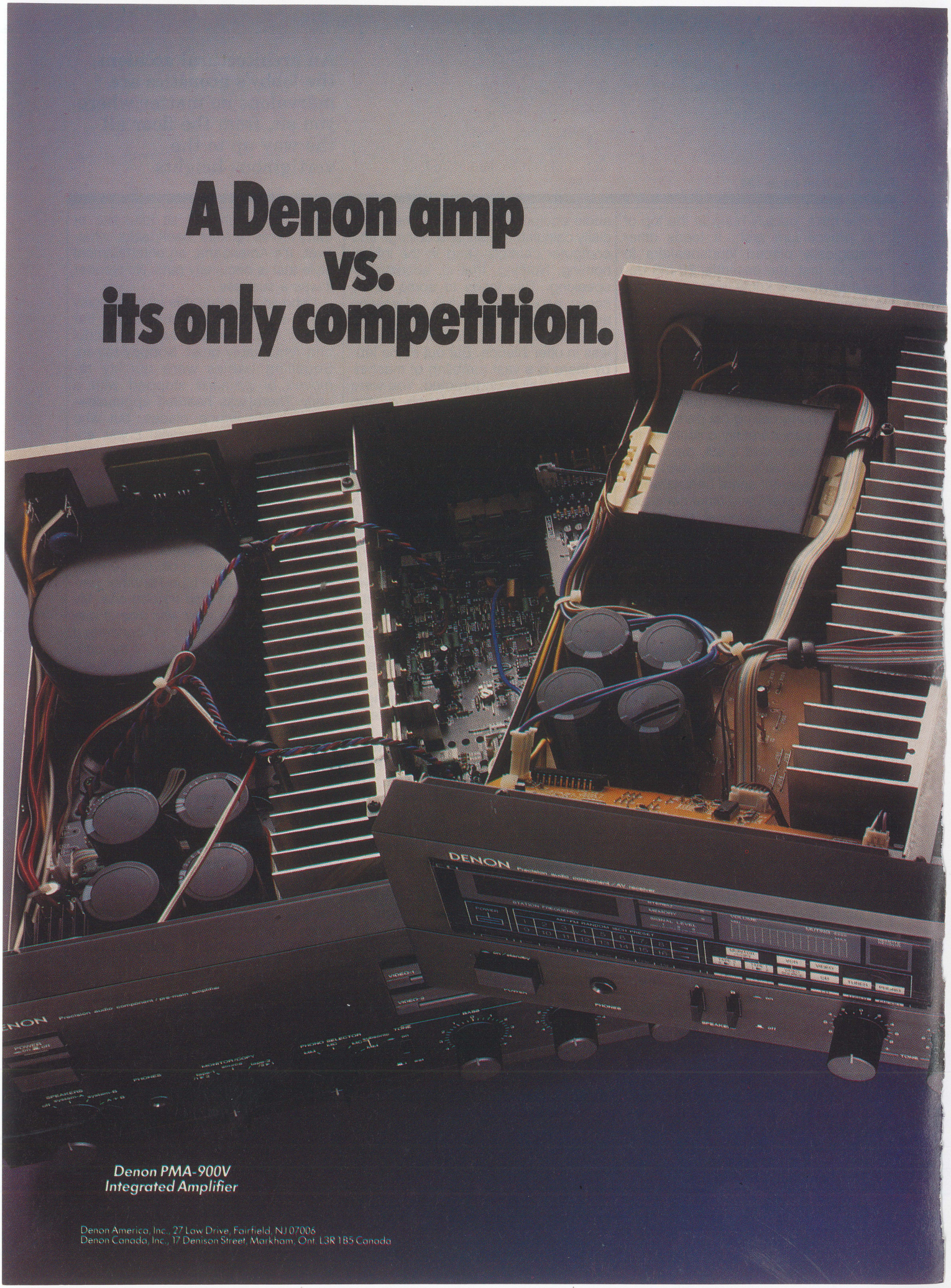
I should add that this was no noisy talk fest with background music. Far from it. The audiences were respectful and remarkably quiet. Nobody talked. Squalling babies were quickly removed or perhaps stopped with a cork. There was heartfelt applause—often in the wrong places, but who cared? Not the musicians! Enjoy, enjoy. If you are in Eugene, visit that lobby even if there isn't a concert.

Meanwhile, what of Silva Hall itself, the main and intended place for music performance? This was the fourth Bach Festival since its opening, along with other year-round events held there, from musicals and rock concerts to solo recitals. Here I found another paradox, but maybe also a good one. My first reaction this year was one of dismay. In several weeks of concerts I heard *not a single mention* of the controversial audio enhancement of Silva's acoustics. For all one could tell, the whole thing might have been ripped out and put away. By now, this was merely a concert hall. Period.

I asked some of the newer musicians—they knew nothing about it; they had not been told. The college students didn't know. The more permanent residents of Eugene who once knew all about the audio (and mostly condemned it out of hand) have carefully forgotten. The music critics do not mention it. The entire electronic system has simply been shoved under a mental rug. As you can suppose, I found myself somewhat frustrated.

But look! Isn't this precisely as it should be? The concert hall, you see, is now treated as a whole and, I would say, by increasing numbers of people. Many enthuse, some don't, but to all the present audiences this is "just a concert hall," not an experiment in electronics. The system works! It is a great success. Nobody thinks for a second about those many microphones and loudspeakers, nor should they. What we have is a working and versatile music space—*exactly as intended*.

The one big surprise is out in that front lobby.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DRA-95VR: Remote Control; Video Capability; 85 W/ch., both ch. driven, 8 Ohms, 20 Hz-20 kHz, 0.03% THD.

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DRA-55V: Non-Switching Class A Circuitry; Video Capability; 55 W/ch., both ch. driven, 8 Ohms, 20 Hz-20 kHz, 0.015% THD.

DRA-35V: Non-Switching Class A Circuitry; Video Capability; 35 W/ch., both ch. driven, 8 Ohms, 20 Hz-20 kHz, 0.05% THD.

Denon DRA-95VR AM/FM Receiver

Admittedly, it's tough to compete with Denon's integrated amplifiers. In Japan, they've been praised for "a wide balance and richness in sound" and called "nothing short of phenomenal." But now Denon amps are getting a run for their money... from the new Denon receivers.

Combining a separates-quality amplifier and tuner on the same chassis is not a new idea. But who else actually does it? Look inside the new DRA-95VR Receiver and you'll find precisely the same circuits that make Denon amps so highly acclaimed.

You'll discover the same Pure Current Power Supply for an amazing 60 dB reduction in dynamic IM distortion. You'll see the same discrete output transistors (not cheap IC "power packs") for superior sonic resolution. The same video inputs and outputs. And the same MC cartridge head amp.

Beyond even this, Denon's top two Receivers are supplied with an integrated remote control that also operates a Denon Cassette Deck and any of three Denon CD Players.

So before you make your next high fidelity purchase, get yourself to a Denon dealer. He'll show you the only receivers with the guts to stand up to the world's finest integrated amps.

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DESIGN INTEGRITY

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AUDIOCLINIC

JOSEPH GIOVANELLI

Noise from an Unterminated Phono Stage

Q. When I set my receiver to "Phono" and turn the volume up, with no cartridge connected, there is a lot of noise. Is this a reflection of the receiver's phono S/N ratio?—Richard Vinyard, Jacksonville, Fla.

A. Electronic devices produce more noise when their inputs are not connected or "terminated" than when they are terminated. Thus, it is not surprising that you hear a considerable amount of background noise in the situation you describe. This noise does *not* represent the amount of noise which will be produced by the phonograph stage when a cartridge is connected. The signal-to-noise ratio should *always* be measured with the appropriate cartridge connected.

Speaker Phasing In an Ambience System

Q. I have an ambience system consisting of a set of main-channel speakers and a set of rear speakers driven by a separate amplifier and reverberation system. One of my pairs of loudspeakers is, however, not marked as to phase. How do I obtain correct phase between the front and rear speakers?—Name withheld

A. Because the reverberant sound is likely to bear an irregular phase relationship to the main program, phase coherence between front and rear speakers should be of little importance. However, if the speakers used for the front or main channels are not marked as to phase, the phase relation between that pair could be incorrect, leading to very poor bass response.

The simplest cure for this is to experiment, using a monophonic program source applied to both speakers equally. By alternately reversing the leads of *one* of the speakers, you can determine by ear when that monophonic signal has the most bass. This indicates correct phase.

Let's assume now that the rear speakers are the pair which are unmarked as to phase. Again, you can experiment with the phase relationship as described above. In this instance, however, I suggest that you use the actual reverberation signal as the source, and do not make that signal monophonic.

VHS/Beta Hi-Fi And Digital Recording

Q. My friend claims that hi-fi sound on video Hi-Fi (VHS or Beta) is "digital." Is this true?—Brian Grifman, New York, N.Y.

A. The audio process employed in VHS and Beta VCRs is *not* digital. It is definitely analog. Stating it simply, the audio is produced by placing two FM subcarriers within the video band. These subcarriers are modulated by the audio signal. During playback, the signals are demodulated and fed to the audio output of the machine.

However, digital audio *can* be recorded on a VCR using a "black box" processor such as Sony's PCM-F1. All of the processors with which I am familiar are external units which make the VCR totally dedicated to digital audio so that no video is possible.

All 8-mm VCRs have FM (sometimes called AFM) audio tracks. Many of the newer ones also have PCM sound tracks which can accompany the picture, and some of these models can lay down PCM audio in place of the video tracks, for a digital sound-only capacity of up to 24 hours per cassette. However, this PCM system's parameters (32-kHz sampling rate and 8-bit samples with analog companding, rather than CD's 44.1-kHz rate and 16-bit samples) limit its frequency response and dynamic range.

Comparing S/N Ratios

Q. There is a mixer/preamplifier selling for $130. In terms of its phono-stage S/N ratio, how would this unit compare to a receiver, costing many times more, which boasts an 88-dB S/N in its phono stage?—Richard Vinyard, Jacksonville, Fla.

A. To put it succinctly, you can't compare the units. This does not mean to say that the mixer can't actually have a better S/N ratio than the more expensive receiver. Remember that a receiver contains a great deal more circuitry and functions than a mixer/preamplifier does. For this reason alone, it makes sense that the receiver costs much more than $130. There is no way of knowing how much attention was given to the design of the receiver's phono circuit, compared to that given to the mixer's phono stage.

Let me give a rough example. I own a battery-operated mixer which cost around $40 when new. It is good enough, despite its conservative S/N spec of 56 dB, for me to easily use it with ribbon microphones. In fact, I measured it as having close to 80 dB S/N. So you just never know.

Ventilation and R.f.i.

Q. Will ventilating the cover of a preamplifier by inserting a fine-mesh steel screen increase its susceptibility to r.f.i.?—Tom Unger, Gardena, Cal.

A. Because no screen is 100% efficient in its ability to shield a piece of equipment from radio-frequency interference, I believe there would be some increased susceptibility to such interference by using a screen rather than a solid enclosure. This is especially true when using a steel screen rather than copper.

If you are not bothered by such interference now, chances are that ventilating the equipment will not create problems unless you are in close proximity to radio noise. But I can't help wondering why it is necessary to ventilate a preamplifier at all. Such equipment generates only a small amount of heat.

Fuse Failure

I would like to share my experience with the reader whose monophonic amplifier has been blowing its power fuse ever since the amp was incorrectly connected to an organ ("Audioclinic," September 1985).

I think Mr. Lapenna may be replacing a "slow-blow" fuse with a "fast-blow" fuse. All "brute-force" monophonic amplifiers have large power supplies that draw much more than idling current when first turned on. This surge takes place when filter capacitors are charging to their normal operating voltages. Because this surge lasts only a fraction of a second, it can blow a "fast" fuse but will not blow a "slow" one. I had the same problem as Mr. Lapenna's, and blew two fuses before I understood the reason why.—Mark Schlegel, Lincoln, Nebr.

Continued on page 141

If you have a problem or question about audio, write to Mr. Joseph Giovanelli at AUDIO Magazine, 1515 Broadway, New York, N.Y. 10036. All letters are answered. Please enclose a stamped, self-addressed envelope.

THE END OF THE RECEIVER.

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THE DAWN OF A NEW ERA.

The Adcom® GTP-500 Tuner/Preamplifier.

A new level of sonic quality and convenience that obsoletes the receiver.

Adcom is well known as a manufacturer of quality separate components—tuners, preamplifiers and amplifiers—all highly regarded for their exceptional performance *and* their rational prices.

Demonstrably superior quality along with flexibility and affordability is what we now offer in a significantly new type of component. The GTP-500 combines an exceptional tuner and preamplifier on a single chassis, conceived and designed for use with a wide choice of separate power amplifiers.

Avoiding the receiver's inherent problems.

Receivers are not equipped with the heavy-duty, high current, high voltage power supplies available in the best separate power amplifiers. First of all, there just isn't enough space. More importantly, there are technical limitations. In a receiver, such supplies would generate unacceptable levels of heat and hum. And the high signal levels found in the power output stages create a source of noise, crosstalk and preamplifier instability.

Obviously, heat and noise-generating elements shouldn't be operating in close proximity to tuner and preamplifier circuits. However, this is exactly where such elements—scaled down, to be sure—are found in receivers.

That's why the over-all performance of receivers (and integrated amplifiers, for that matter) is seriously compromised for the seeming advantage of all-in-one convenience.

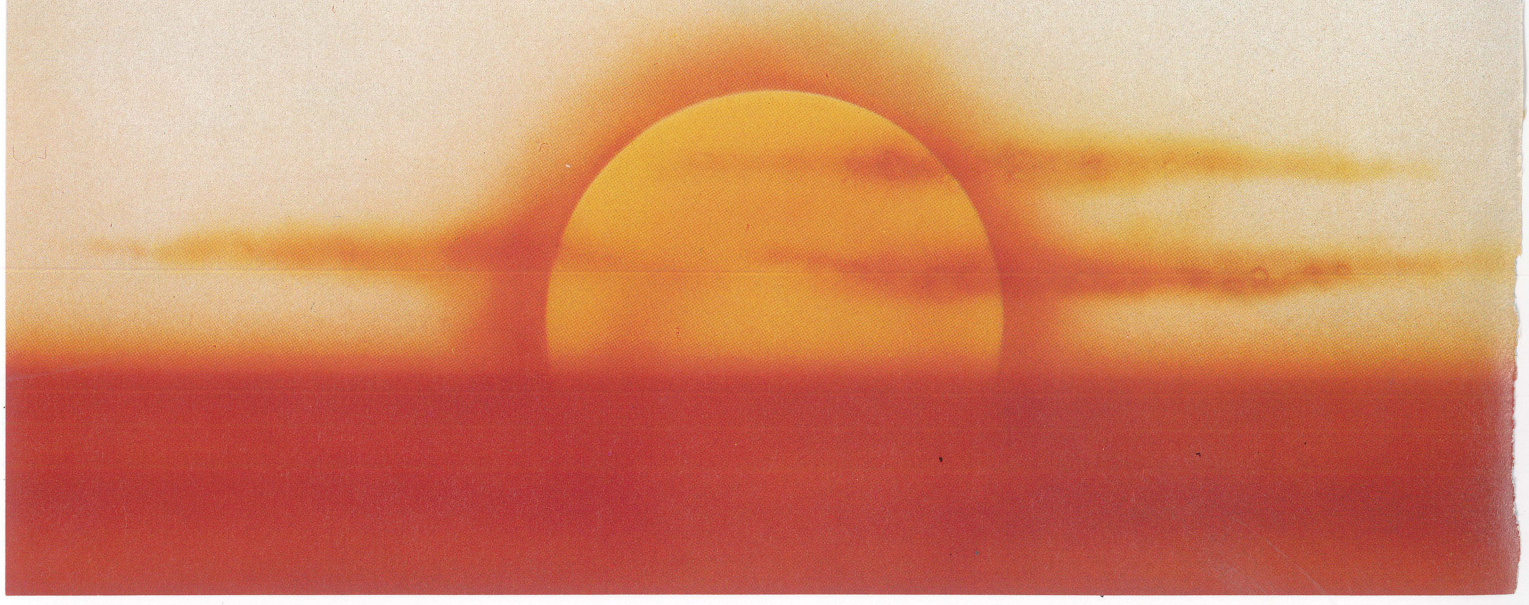
Our new tuner/preamplifier totally eliminates all such compromises, and avoids any degradation in tuner and preamplifier performance typically introduced by the presence of incompatible power-amplifier components.

Simply stated, we've kept the low-currrent, low-voltage elements totally isolated from the high-current, high-voltage elements—as they should be, and may always be from now on in quality components.

60 to 600 watts per channel!

At the same time, we've achieved something else that you can appreciate even without a technical background.

You can now have all the low-distortion power you are ever likely to need or want—from a conservative 60 watts per channel to an awesome 600 watts per channel, continuous, at any time you need it, not just for milliseconds! All with a matching high-performance tuner/preamplifier to control and apply the power.



THE ADCOM TUNER/PREAMPLIFIER AND 60 WATTS PER CHANNEL.

There's a lot more to the GTP-500 tuner/preamplifier than meets the eye.

The tuner section is quartz-referenced and digitally synthesized, with a tuning accuracy of 0.000025 percent. Since tuner accuracy translates into lower distortion, our superb rating is audibly significant.

If you're in an urban area troubled by excessively strong stereo-FM signals and multipath distortion—or in a rural area where distance is a problem—you'll appreciate how well this tuner brings alive the musical aspects of the received signal.

The specially-designed IF stage offers distortion-free listening from high-quality broadcasts. And sensitivity and selectivity are optimized for a balance of performance characteristics that can be appreciated every time you listen to a radio signal.

When especially difficult reception conditions cause excessive noise, a switchable high-blend circuit can be used.

Sixteen stations—eight each, FM and AM—can be programmed for instant retrieval at the touch of a button. Once a station is tuned in, it's locked in. No drift. No error. And a touch of another button scans up or down from any point.

We've added even more remote-control convenience and flexibility than you've been enjoying with your VCRs and TV sets.

An integral part of this new system component is a full-function wireless remote control that lets you command the GTP-500.

Every bit of this high level of performance is yours to control from the comfort of your favorite chair, and—with optional extension remote sensor—from other rooms in your home, as well as patio and pool.

RC-500

Remote control from any chair, any room.

Most useful functions of the GTP-500 can be operated by remote control:

- Power on/off
- Selection of pre-programmed FM and AM stations
- FM scan
- Volume level
- Source selection

Remote sensors, wired to the system, can be installed in other rooms, and activated in the same manner. Thus, the superb performance of your Adcom system can be enjoyed whenever and wherever you like at minimal additional cost.

GTP-500 and GFA-535

THE ADCOM TUNER/PREAMPLIFIER AND 100 WATTS PER CHANNEL.

The preamplifier section.

The preamplifier section provides optimum signal-to-noise ratios at both the phono and high-level inputs. That's very important for playing compact discs and the new wide-range HiFi video systems, as well as your treasured LPs.

The phono and high-level amplifiers (which are at the heart of the preamplifier) use custom-designed linear gain stages that provide low distortion, low noise and high speed.

High accuracy in the RIAA phono equalization circuit assures superb performance from any high-output moving-coil or moving-magnet cartridge.

The separate recording selector allows listening to one source while recording from another.

Tone controls and contouring circuits can be switched in when needed, and are more useful and musically accurate than any you're likely to have encountered.

As for convenience...

Those lights you see on various buttons and controls all have a useful function. They indicate the program source you've selected—phono, tape, CD, tuner, etc.—either manually or with the wireless remote control. The motorized level control also has an LED that rotates with it and can be observed from across the room. Note: Unlike electronic remote control circuits, this one is infinitely adjustable and distortion-free.

As for power...

You've already noted the most obvious advantage of having the tuner and amplifier on one chassis and power amplifier on another: the virtually unlimited choice of output power.

If at this time, 60 watts per channel meets your needs, that's what you can have with the matching GFA-535 power stage. If you need more power—because of your new CD library, or less efficient

GTP-500 and GFA-545

THE ADCOM TUNER/PREAMPLIFIER AND 200 WATTS PER CHANNEL.

speakers in a larger room—you might want our 100-watt/channel GFA-545 or our 200-watt/channel GFA-555.

And if you should ever need extraordinarily high power, that's also available, even at a later date. Just add a second GFA-555, with each amplifier bridged to its mono mode. You'll then have 600 watts per channel.

The quality of power.

Here is where we've made our strongest impact on music lovers who demand the best sonic performance regardless of price.

All our power amplifiers are based on the same sophisticated circuitry as our flagship GFA-555, which received a rare tribute from Stereophile magazine (Volume 8, no. 4). A pertinent quote:

"It is so clearly superior to past amplifiers in the low-to-mid-priced range—not to mention most amplifiers two to three times its price—that I can unhesitatingly recommend it for even the most demanding high end system."*

It's now decision-making time.

If you've been thinking about just another receiver, or something really extravagant, you now have a significantly new and different choice. For the first time, you can have a superb level of sound quality together with convenience and flexibility. And all at a remarkably affordable price.

Anything less will be another compromise.

*A reprint of the complete report is yours for the asking. It also includes the approximate retail prices—up to $6,000!—of all the amplifiers mentioned in the report.

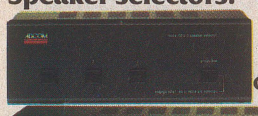
GTP-500 and GFA-555

Remote control of your GTP-500 throughout your home!

XR-500

With one or more XR-500 remote sensors (optional) connected to the GTP-500 Tuner/Preamplifier, you can use the RC-500 wireless remote control to operate your Adcom system from as many rooms as you like.

Speaker selectors.

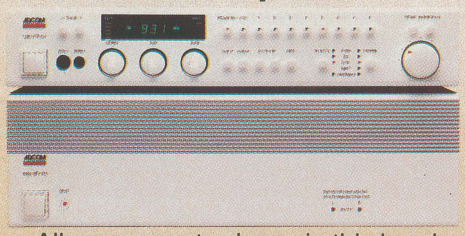


GFS-3

GFS-6

These heavy-duty speaker selectors can be used with amplifiers rated up to 200 watts/channel. The GFS-3 switches up to three speaker pairs; the GFS-6, up to six pairs. Each speaker selector contains special circuitry to protect your amplifier from reduced impedance when multiple speakers are operating at the same time.

Components also available with white or silver front panels.



All components shown in this brochure (except the GFS-3) are available on special order with white or silver front panels. The GTP-500 Tuner/Preamplifier and GFA-545 Power Amplifier are shown here with white front panels.

Rack Mount Adaptors.

Optional adaptors for 19" rack mount are available for all models except GFS-3.

SPECIFICATIONS GTP-500

FM TUNER SECTION

IHF sensitivity, mono: 9.5 dBf
Signal strength for −50dB quieting, mono/stereo: 12.5/36.5 dBf
Capture ratio: 1.5 dB
AM suppression: 65 dB
Alternate channel selectivity: 80 dB
Separation at 1kHz: 52 dB
THD/stereo: at 1kHz, 0.09%
Maximum signal-to-noise ratio, mono/stereo: 85/75 dB
Frequency response: 30Hz-15kHz
Antenna impedance: 75 or 300 ohms

PREAMPLIFIER SECTION

Total harmonic distortion: 0.01%
IM distortion: 0.005%
Frequency response: 20 Hz — 20 kHz ± 0.1 dB
Maximum output level: 8 volts
Input sensitivity for .5V output:
Phono: .4mV
High level: 40 mV
Signal-to-noise ratio:
For .5V output: Phono: 82 dB
For 2V output: High level: >100 dB
Tone controls:
Bass (40 Hz) ± 9.0 dB
Treble (15 kHz) ± 9.0 dB
Output impedance: 470 ohms
High filter: −2 dB at 20 kHz
Low filter: −5.0 dB at 20 Hz
Voltage: 117V/60 Hz (Available in 220V/50Hz on special order)
Dimensions: 17 x 3¼ x 12¾"
Weight: 15 lbs.
Optional accessory for GTP-500:
RM-3 rack mount adaptor

AMPLIFIERS	GFA-555	GFA-545	GFA-535
Power output, watts/channel, continuous, both channels, 20 Hz-20 kHz, <0.09% THD:			
8 ohms	200	100	60
4 ohms	325	150	100
Bridged, mono, 8 ohms, 20 Hz-20kHz, <0.25% THD:	600	n/a	n/a
Bridged, mono, 4 ohms, 20 Hz-20kHz, <0.25% THD:	850	n/a	n/a
Signal-to-noise ratio A-weighted, full output:		>106 dB	
Input impedance:		22 kOhms	
Input sensitivity: for rated output:	1.0 volt	1.3 volts	1.85 volts
for 1 watt:		130 mV	
Damping factor (20 Hz-20 kHz):		130	
Dynamic headroom (at 4 ohms):	2.3 dB	2.6 dB	3 dB
Voltage:		117V/60 Hz (Available in 220V/50Hz on special order)	
Dimensions:	17x7⅜ x11½"	17x5½ x12½"	17x3¼ x12½"
Shipping weight:	35 lbs.	27 lbs.	22 lbs.
Optional rack mount adaptors:			
Black:	RM-7	RM-5	*RM-3
White:	RM-7W	RM-5W	*RM-3W
Silver:	RM-7S	RM-5S	*RM-3S

*Also for GTP-500

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Why connect VU meters to speaker lines? There are better ways to read amp power. But if you still want to know, here's how.

Continued from page 134

VU Meters Across Loudspeaker Lines

Q. How do I connect VU meters to my speaker lines?—F. Keenan, Lima, Ohio

A. I assume your purpose is to know when your amplifier is delivering some given power level. You can buy meters designed for this purpose (such as Radio Shack's Cat. No. 42-2107, $24.95), and perhaps you might prefer to—VU meters cannot be used in this way without external circuits to drop the signal voltages from the amplifier to the much lower voltages the meters are designed to read.

Figure 1 shows such a circuit, but requires some explanation. The 5.6-kilohm resistor across the meter terminals damps the meter movement to give it the characteristics of a typical VU meter. The 15-kilohm resistor and the potentiometer, in series with the amplifier's "hot" terminal and the meter, drop the signal voltage down to the proper level. By using one fixed and one variable resistor, we get a circuit which is easy to adjust and calibrate yet still gives the meter some protection against overload if the variable resistor should be set to zero. Note in Fig. 1 that the potentiometer is wired as a rheostat, with its wiper contact wired to one end terminal.

We now need to use Ohm's Law to calculate the value of the pot and to calibrate our circuit. First, we must calculate the voltage across the amplifier for the signal level which we wish to have read "0 VU" on our meter. The formula for this is $V = \sqrt{P \times Z}$ where V stands for voltage, P for power, and Z for the impedance of the speaker. For example, an amplifier delivering 20 watts into an 8-ohm speaker would develop 12.7 V ($\sqrt{20 \times 8} = \sqrt{160} = 12.7$). A VU meter should read "0" for a signal of 0.707 V, so we need a circuit which will drop a 12.7-V signal to 0.707 V, a ratio of about 18:1. (Since we're using a variable resistance which we can calibrate later, ballpark figures are close enough.)

If the ratio between the meter's impedance and that of the whole meter circuit is 18:1, we'll get our desired voltage drop. The internal impedance of a VU meter, as I recall, is about 5.6 kilohms; the 5.6-kilohm damping resistor across its terminals effectively cuts the impedance at this point in half, to about 3 kilohms. So the total meter circuit should have an impedance of 18 × 3 kilohms, or 54 kilohms. Subtracting the resistance of the damped meter and the 15-kilohm fixed resistor, we get 36 kilohms (54 − 15 − 3). To get a safety margin, use the next higher value commonly available, either 50 or 100 kilohms.

To calibrate the circuit, set the potentiometer to its maximum resistance, feed your amplifier a test signal from an oscillator, test CD, or test record, and gradually raise the input level until an a.c. voltmeter across the amplifier terminals registers 20 V. Then adjust the pot until the meter reading climbs to "0 VU."

Some cautions are in order: Use a middle frequency, such as 400 Hz, rather than a very low or high one, which might damage your woofers or tweeters. Feed the tone in short bursts—it won't serve any purpose to wreck your speakers or destroy your amplifier's output stage if you have miscalculated somehow. And be aware that amplifiers have headroom, which allows them to deliver more than their rated power for brief bursts; if you've calculated your circuit so that your meter will read zero when your amplifier reaches its full rated output, be prepared to have the meter "pin" from time to time, and possibly even suffer damage, if you drive the amp beyond the meter's highest calibration point.

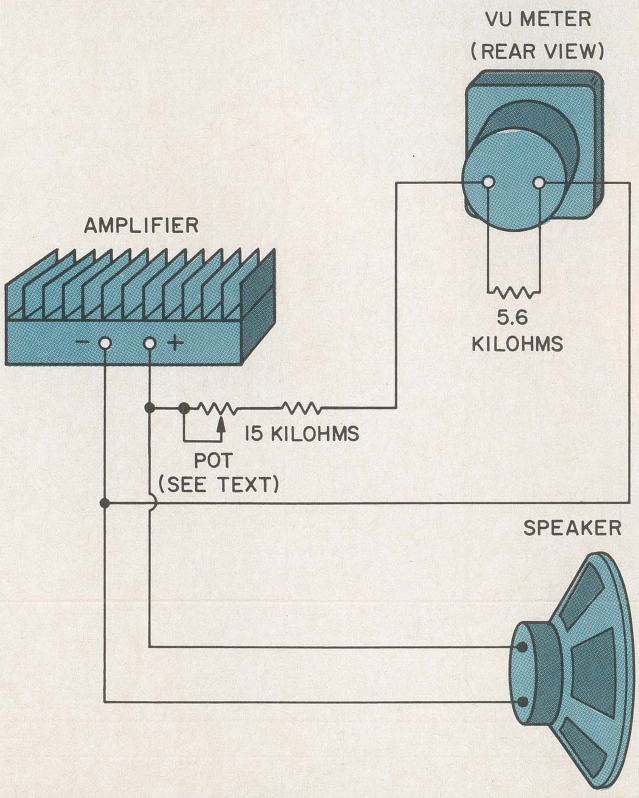

Fig. 1—Circuit for measuring signal levels in speaker lines with a VU meter. (The formula for calculating the value of the pot, and calibration instructions, are given in the text.)

Vertical Antenna Polarization

Q. What is "vertical polarization" of an FM signal, which supposedly improves automobile FM reception? Does it degrade regular reception in any way?—Name withheld

A. Generally, automobile radio antennas are vertically mounted. FM transmitting antennas used to be arranged to transmit horizontally, meaning that these signals would be best received by using an antenna mounted horizontally. To overcome the problems of receiving FM signals in automobiles, stations now use a combination of the two antenna types so that any receiving antenna can be used. There is no signal degradation.

The best CD Player is a matter of opinion. Many opinions.

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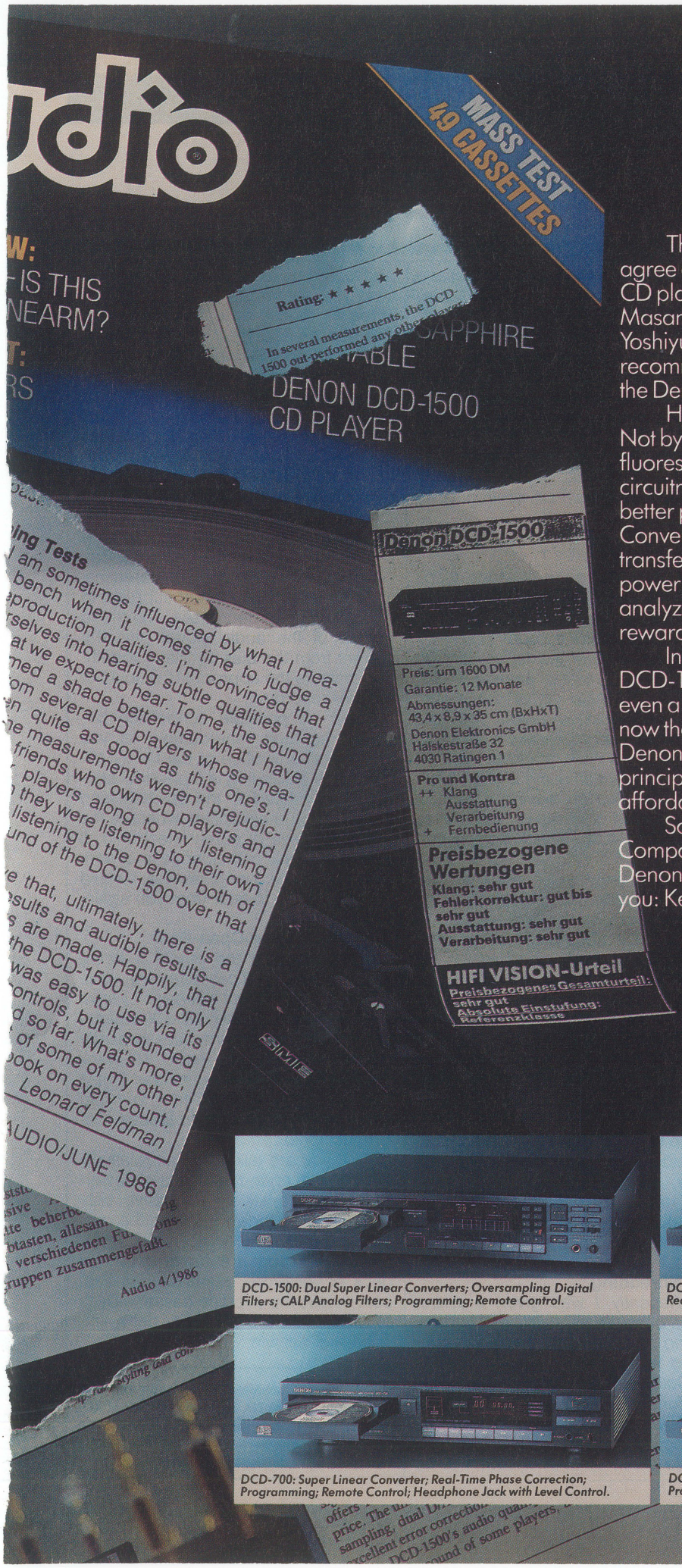

The audio critics of the world hardly ever agree on anything. But when it comes to superlative CD players, Ken Pohlmann, Len Feldman, Masamitsu Fukuda, Ulrich Smyrek, David Prakel, Yoshiyuki Ishida, Artur Jung, and Hideo Kaneko recommend one model with amazing consistency: the Denon DCD-1500.

How did Denon achieve this exalted status? Not by offering useless buttons, switches and fluorescent displays. But by developing better digital circuitry, building to higher standards, and using better parts. Our proprietary Super Linear Converter is the only one that actually corrects D/A transfer distortion. Each circuit gets its own separate power supply. And our filters are computer-analyzed for linear phase. So you hear sound that rewards the most critical listening.

In a player as reasonably priced as the DCD-1500, these refinements are enough to make even a hard-boiled critic stand up and cheer. And now there's more cause for celebration: three new Denon CD Players. They're built on the same principles as the DCD-1500, and they're even more affordable.

So if you want to hear the best that the Compact Disc format has to offer, get yourself to a Denon dealer. And don't forget to tell him who sent you: Ken, Len, Masamitsu, Ulrich...

DENON
DESIGN INTEGRITY

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DCD-1500: Dual Super Linear Converters; Oversampling Digital Filters; CALP Analog Filters; Programming; Remote Control.

DCD-1300: Super Linear Converter; Oversampling Digital Filters; Real-Time Phase Correction; Programming; Remote Control.

DCD-700: Super Linear Converter; Real-Time Phase Correction; Programming; Remote Control; Headphone Jack with Level Control.

DCD-500: Super Linear Converter; Real-Time Phase Correction; Programming; Emphasis Display; Headphone Jack.

TAPE GUIDE

HERMAN BURSTEIN

Tape Timing

Q. Can you explain why the tape counter of my cassette deck is not related to actual elapsed time? How can I use this counter to know whether I have enough tape left to record, say, a four-minute selection? How can I tell how much time is left at any given point on the tape?—Barry Sussman, Summit, N.J.

A. In most cassette decks the tape counters are tied in with rotation of the take-up reel, and of course the number of rotations of the reel per minute of tape time keeps changing with the amount of tape on the reel. It is possible to have the counter show elapsed time, but this is a much more expensive and difficult proposition and is limited to high-priced decks.

I suggest that you invest some time in developing a graph (preferably) or a table which relates elapsed time to readings of the counter. Starting with the counter at zero, allow 60 seconds to pass, and note the counter reading; allow another period of time to pass, say 60 seconds again, and again note the counter reading. Continue to do so throughout the reel. If you find 60-second intervals too laborious, use two- or three-minute intervals instead. If you put your findings into graph form, you can more easily rely on even longer intervals, say five minutes each, to give you the desired information.

The advantage of a graph is that you can connect your plotted points to form a smooth curve, thereby facilitating interpolation between the readings you have taken. Such a graph will probably be accurate to within substantially less than one minute, good enough for most purposes. Remaining time would be simply the difference between elapsed time and total time. Of course, you'll need a separate graph (or table) for each cassette length—C-90, C-60, and so forth.

Power During Demagnetization

Q. I have a question about demagnetizing my cassette deck. The instructions say to shut the power off before demagnetizing. I want to use a cassette-type demagnetizer instead of a wand. But my deck's transport is solenoid-operated, so the power must be on in order for the heads to come forward into contact with the demagnetizer. I don't want to damage my cassette deck. Can you help me?—Frank Scanarano, Wantagh, N.Y.

A. If you use a cassette-type demagnetizer, of course the power must be on in order to actuate it. There is no danger to your deck in doing so. However, you must be sure that the main volume of your audio system is all the way down, because the demagnetizer will generate sound in the playback head, and this could be destructive to your speakers.

Slipping Tape

Q. During playback of tapes that I have recorded recently or as much as five years ago, the tape slows down at various places until a soprano sounds like a bass. If I put the tapes through fast wind and rewind several times, they play normally for a while, but eventually slow down again. They act the same way on other decks. My deck is cleaned and demagnetized regularly, and I have been using a head lubricant. Could that be leaving a residue which makes the tapes adhere to themselves?—Otis Shackelton, Santa Monica, Cal.

A. Apparently your deck is absolved, because the problem occurs on other decks, so the tapes appear to be at fault. Do tapes recorded on other decks play properly on yours? If so, the difficulty focuses all the more sharply on your cassettes. The problem could be poorly made cassettes—an off-brand, the low-price line of a reputable brand, or a poor batch of any brand. It might be, as you ventured, that your head cleaner has left a residue on the tapes which causes them to stick. Or, possibly, the lubricated heads were not allowed to dry sufficiently, so that lubricant got on the tapes, making it difficult for the capstan and pinch roller to get adequate grip on them.

Tape Shredding

Q. Recently I was given a prerecorded cassette as a gift. The accompanying literature says that it was recorded with Dolby B noise reduction and Dolby HX Pro. How is this possible? Further, whenever I play the tape with Dolby B on, it leaves "shreds" on the record/playback head, which I have to clean off with a cotton swab and isopropyl alcohol. But if I play the tape with the Dolby B off, it doesn't shred as much. What is causing this, and how can I correct it?—Kevin Ruppenthal, Clarks Summit, Pa.

A. In recording, the Dolby circuit senses the amount of high-frequency content in the audio signal and varies the treble boost accordingly; the less the treble content, the greater the boost. (In playback the reverse happens: The less the treble content, the greater the treble cut, to restore flat response.) The same treble-sensing circuit can be used for Dolby HX Pro, so that as the treble content increases, the amount of bias current supplied to the record head decreases. The treble portion of the audio signal plus the current from the bias oscillator together constitute the appropriate amount of bias for recording.

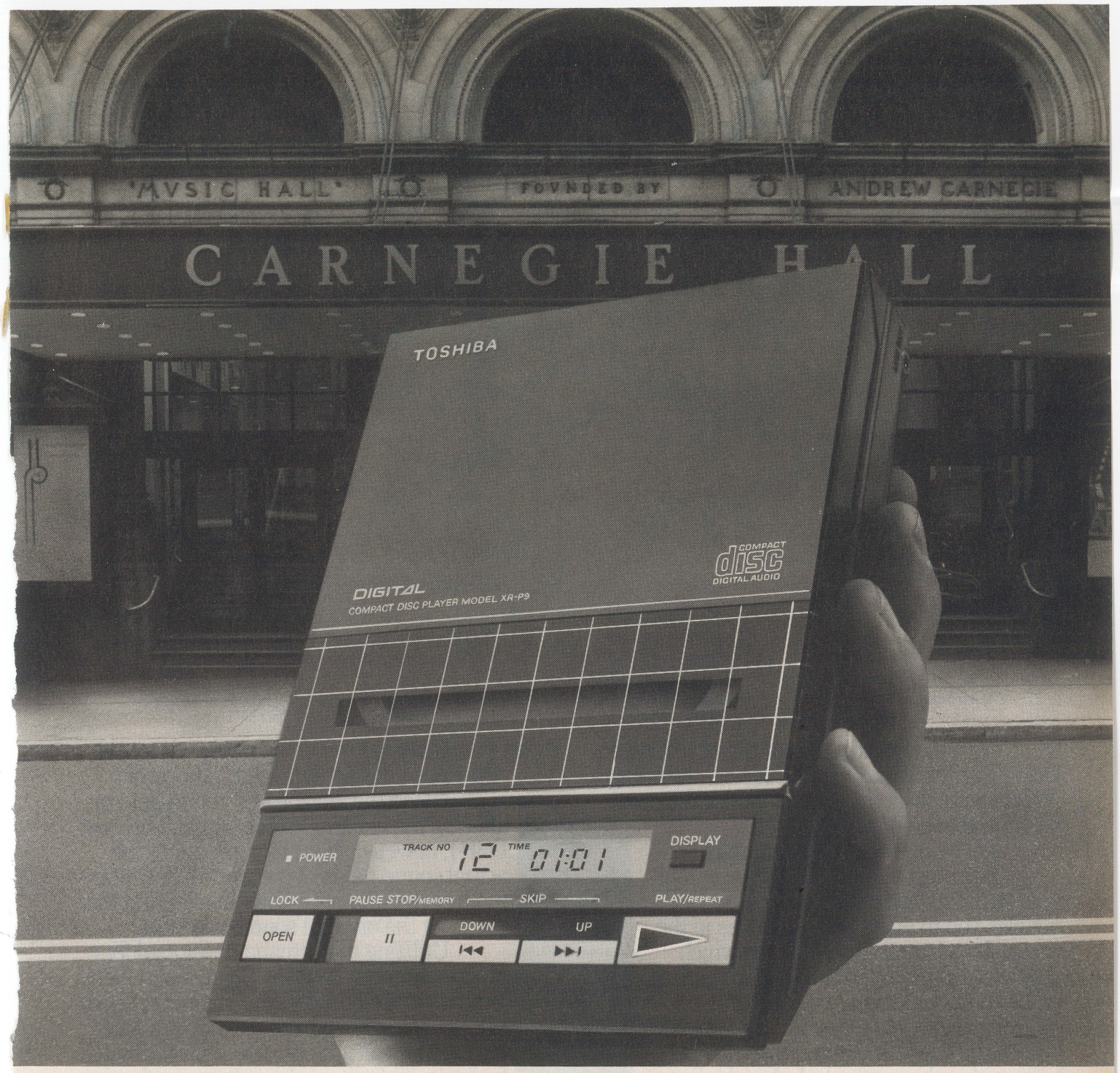
I see no possible connection between the tape "shredding," as you call it, and activation of the Dolby circuit. Tape shredding is a physical phenomenon related to the cassette and the transport mechanism, whereas the Dolby process is purely electronic. It seems that only coincidence is at work here. If you discover otherwise, I would very much like to hear from you again.

Cassette Versus Open-Reel

Q. I think that too much is being made of how good cassettes are, while nothing is said about open-reel. I have an 18-year-old Ampex AG-500 which I believe will outperform any cassette deck when taping live music. Yet many equipment reviews suggest that a new cassette deck will do better than old open-reel decks.—Donald Bisbee, Columbus, Ohio

A. If you are talking about relatively inexpensive open-reel decks of yesterday versus relatively expensive cassette decks of today, I believe the cassette will rival or outdo open-reel. If you are talking about a superior open-reel deck of yesterday, such as your Ampex, versus the average cassette deck of today, you are probably right—the open-reel will win.

If you have a problem or question on tape recording, write to Mr. Herman Burstein at AUDIO, 1515 Broadway, New York, N.Y. 10036. All letters are answered. Please enclose a stamped, self-addressed envelope.



The best sound you can hear next to Carnegie Hall.

Listen to Toshiba's Portable CD player outdoors and something remarkable happens. It sounds like you're inside a concert hall. There's no distortion. No wow. No flutter. Only pure, concert quality sound.

Yet, when you take home this portable, it's a top of the line CD player. Hooked up to your stereo system through its AC adaptor, it offers features you won't find in other portables: 16 program random memory, 3-beam laser pick-up to guard against mistracking, plus a full function display that monitors the track, lap and remaining time. There's even a 15 function wireless remote control. And, of course, incomparable sound.

Toshiba's portable CD player. Outside of a concert hall nothing sounds better.

In Touch with Tomorrow

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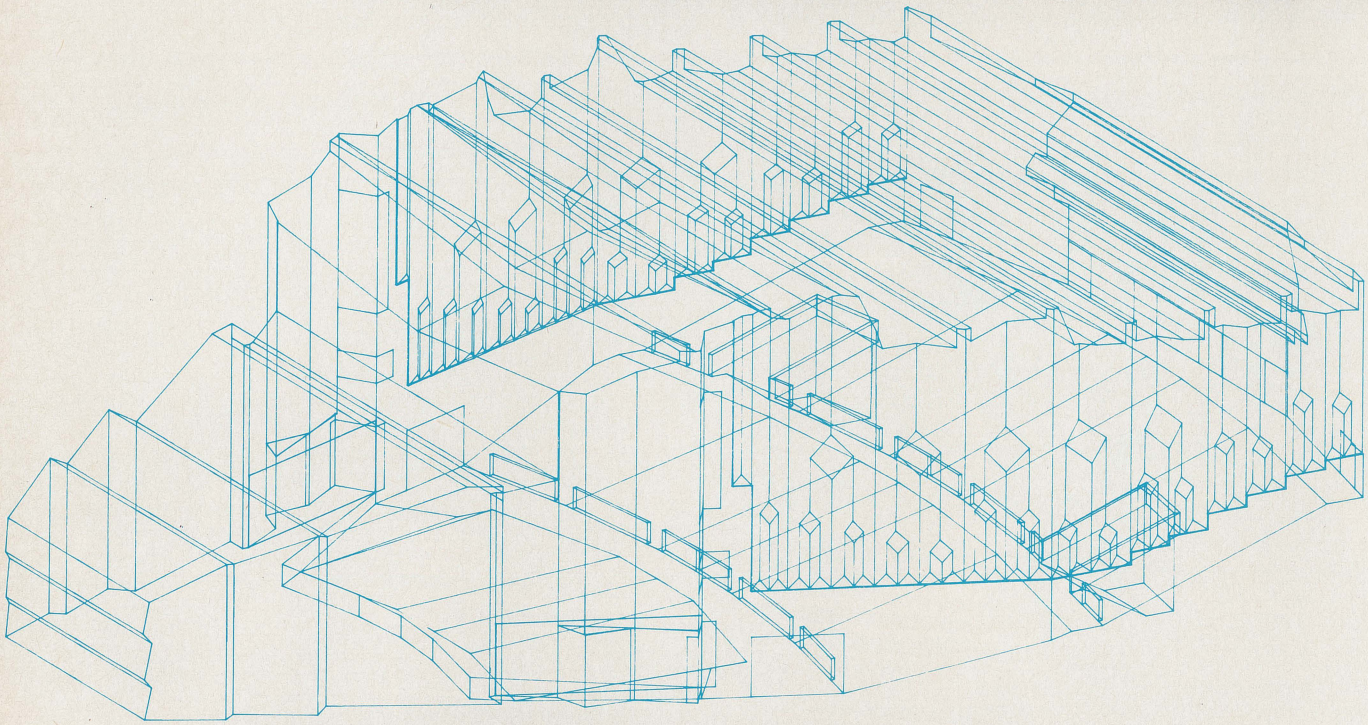
A man's home is



The revolutionary Yamaha DSP-1 brings world-famous acoustical environments into your listening room at the push of a button. Its 30-key wireless remote unit (below) controls a two-line, 16-character backlit LCD that displays all program functions on the DSP-1.

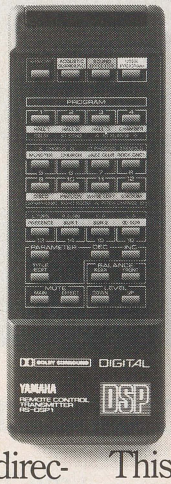
With the introduction of the new Yamaha DSP-1 Digital Sound Field Processor, listening to recorded music at home is no longer the next best thing to being there.

It is being there. Quite literally.

The most significant advancement in acoustic realism since stereo, the DSP-1 enables you to enjoy performances in the actual listening environments in which they were intended to be heard in the first place. Without leaving your home.

In twelve of the world's most famous sites, to be exact. Including three concert halls, a chamber, cathedral, church, disco, jazz club, rock concert arena, warehouse loft, pavilion, and outdoor stadium.

Additionally, the DSP-1 offers a four-directional presence mode as well as three surround-sound systems: a large theater, a medium sized theater and even digital delay Dolby* surround.



Previous analog "surround" processors simply produced the illusion of a sound field by altering the existing stereo signal. The new DSP-1, however, digitally reproduces the actual sound fields of the world's finest listening environments, without affecting the purity of the original source material.

Utilizing the Yamaha-developed four-microphone Single Point Quad sound field analysis technique, Yamaha engineers spent five years analyzing the acoustic architecture of the world's most noted performance facilities, including echo patterns, reflective personalities and such data as timing, volume level and apparent source directionality. This information was then programmed into the DSP-1's computer memory (ROM).

The frequency response and dynamic range

It's his cathedral, church, disco, stadium

no longer his castle.

characteristics from your stereo source material trigger the continuous release of this information, to precisely reproduce the acoustic personalities of selected performance environments.

The reproduction of this acoustic architecture in your home is made possible by the development of a proprietary Yamaha VLSI (very large scale integrated circuit), the YM-3804. It calculates early sound reflections in real time based on the echo patterns stored in the DSP-1 memory—enabling accurate re-creations of these listening environments at the push of a button.

Each reflection is calculated using the very same sampling rate and quantization as compact discs (44.1 kHz, 16 bit linear), producing an output with dynamic range of 94 dB and 0.006% THD, making audiophile quality digital sound field synthesis possible for the very first time.

Every DSP-1 acoustic response pattern has several key response parameters you can alter to customize the size, shape and character of the listening environment.

These include room size, liveness, initial delay time, high pass filter cutoff, low pass filter cutoff and reverberation time.

After modifying a program, you can then give it a name, and store it in one of the DSP-1's 16 user memories.

In addition, there are 16 sound effector programs built in, such as time-delay, stereo flange, tremolo, chorus, pitch change and auto panning. So the DSP-1 can also be used effectively as a musical instruments effects device.

All sound field modes and parameters are controlled from the palm of your hand, since the DSP-1 is operated by a 30-key wireless remote control. This allows you to select the performance environment and adjust parameters—even program them into memory—without sacrificing the perspective of your listening position.

Its large backlit LCD confirms all mode selections and parameter readings as you make them. The remote control also lets you adjust the effect level and front/rear balance, and even give titles to those new modes you program.

The full benefits of Yamaha sound field synthesis is best experienced with four speakers which are powered by the new Yamaha 4-channel M-35B power amplifier, in addition to the front stereo speaker pair, driven by your existing amplifier.

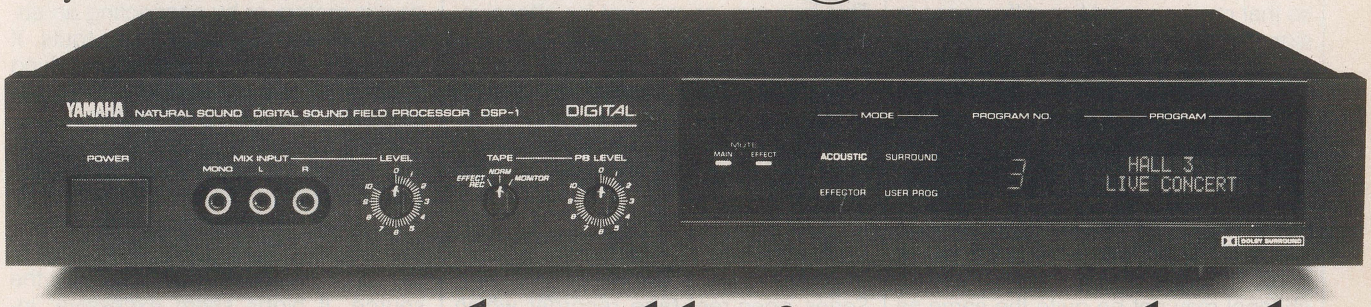
If desired, however, the front left and front right output may be combined with the existing main-channel speakers.

For our thorough White Paper on Yamaha digital sound field synthesis, please write us at the address shown below.

But mere words can never hope to convey the magnitude of this accomplishment. Visit an authorized Yamaha dealer today for a complete demonstration. And discover why stereo alone is now as outdated as living in a castle.

Yamaha Electronics Corporation, USA, P.O. Box 6660, Buena Park, CA 90622

YAMAHA®



concert hall, jazz club, and theater.

*Dolby is a trademark of Dolby Labs, Inc.

Recording with Dolby B and subsequent playback using Dolby C cuts noise, but it cuts treble too, and you may consider this loss to be undesirable.

Misaligned Cassette Door

Q. I recently purchased a cassette deck and a few days later noticed that the door is out of alignment. It is about 1/16 inch too far out on one side and the same distance too far in on the other. Will this cause any loss in sound quality because the tape may not be running properly with respect to the heads?—Joe A. Budz, Hudson, Ohio

A. I really don't know if it will help to change the alignment of the door—which presumably holds the cassette and therefore determines its alignment with respect to the heads. It may be that whatever position the cassette now takes puts it in proper alignment with the heads.

To determine whether you are now getting good response, tape some interstation noise from your FM tuner. (I assume you have a tuner or can borrow one.) Compare the tape playback with the FM noise by switching between the two. If the tape playback compares well with the noise, particularly at the high end, realignment is probably not needed.

Checking Azimuth

Q. What equipment and procedures are needed to check and adjust azimuth alignment?—Michael J. DeVoge, Conneaut Lake, Pa.

A. One needs a high-quality test tape and an audio voltmeter; if the deck has separate record and playback heads, a signal generator is also needed. If the deck has mechanical VU meters rather than electronic ones, so that one can read fine differences in signal level, and if the meters can read playback level, one may use these instead of a separate audio voltmeter.

The procedure is to play a high-frequency tone from the test tape, usually in the range of 12 to 15 kHz, and adjust the playback-head azimuth for maximum output as determined by your meter. The azimuth alignment which gives maximum output on the left channel may not be quite the same as that which produces maximum output on the right. In that case, one has to find a compromise position.

A warning is in order. It is possible to get false azimuth peaks which are lower than the true azimuth peak output, and this is more likely when adjusting azimuth on the basis of a very high-frequency tone. Therefore, some test tapes provide a lower test tone, perhaps around 5 kHz, for making a preliminary adjustment of azimuth. After the preliminary adjustment, which brings one into the vicinity of the final setting, one fine-tunes azimuth on the basis of the very high-frequency tone, such as 12 kHz.

If the deck uses the same head for recording and playback, nothing more is required. If there is a separate record head, one records a high-frequency tone produced by a signal generator and simultaneously plays it, meanwhile adjusting the record-head azimuth for maximum output in playback. As before, one should beware of false peaks in adjusting azimuth. And one should again recognize that it may be necessary to find a compromise setting that treats both channels equally.

Mixed Dolby

Q. I have discovered that by recording with Dolby B NR and playing back in Dolby C I can greatly reduce noise. What is happening?—Mark A. Marinello, New Orleans, La.

A. Dolby B NR accomplishes about 10 dB of noise reduction, and Dolby C about 20 dB. Thus, if you record with Dolby B and play back with Dolby C, you achieve an extra 10 dB or so of noise reduction. What is happening is that the treble cut in playback with Dolby C exceeds the treble boost supplied in recording with Dolby B. However, the Dolby B/C combination also reduces treble response in playback. This loss may or may not be offensive, depending on the listener and on the program content. In the case of program material with excessive brilliance (supplied by some recording engineers) or speakers with an excessive high end, the treble cut may even be desirable.

Conversion to 15 IPS?

Q. We have a Crown SX 700 Pro-Series open-reel tape recorder which has hardly been used. It is still like new, and a beautiful piece of equipment. Would it be worthwhile to modify it from 7½ to 15 ips?—John and Fran Miletiz, Ottawa, Ill.

A. I doubt that it is worthwhile to go from 7½ to 15 ips for home purposes, considering the excellent results obtainable at 7½ ips, and considering the effort and expense which you would have to incur. Not only would mechanical changes be required, but it would also be necessary to modify the record equalization and perhaps the bias. Further, keep in mind that the standard NARTB speed is 7½ ips; this suggests how well one can do at this speed.

The most significant improvement that can be made is in signal-to-noise ratio. Very little such improvement would come from converting to 15 ips—perhaps 3 dB or so. There would also be an improvement in headroom (protection against tape saturation at high frequencies when recording at high levels), but again not all that much. You can achieve a vast improvement in S/N—virtually total silence in the background—by using a noise-reduction unit such as dbx's.

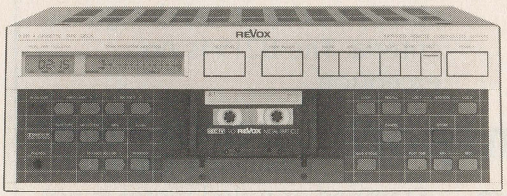
Adjusting Bias

Q. My cassette deck has adjustable bias, but it doesn't have built-in test tones for calibrating it. However, I have a mixer-calibrator with 400-Hz and 8-kHz test tones that I can feed to the deck. What is the proper procedure for calibrating bias?—Steve Snarr, Springfield, Ohio

A. Recording at a level of about −20 dB, adjust bias so that when 400-Hz and 8-kHz tones of equal amplitude are fed into the deck, these tones are also of equal amplitude in playback. If you have a three-head deck, you can measure the amplitude of the 400-Hz and 8-kHz outputs by looking at your deck's meters or by connecting an audio voltmeter to the deck's outputs. If you have a two-head deck, making your adjustments will involve a trial-and-error procedure of making a recording, rewinding the tape, and playing it back to test the effect of each bias change.

After you have completed the above procedure, copy a good phono disc or CD and compare the tape with the source. If highs seem excessive, increase the bias slightly. If highs seem insufficient, decrease the bias slightly. Another good source for comparison purposes is FM interstation noise. Do not be afraid to trust your ears in adjusting bias. In fact, some audiophiles consider this the best of all ways to adjust bias.

The pro comes home.



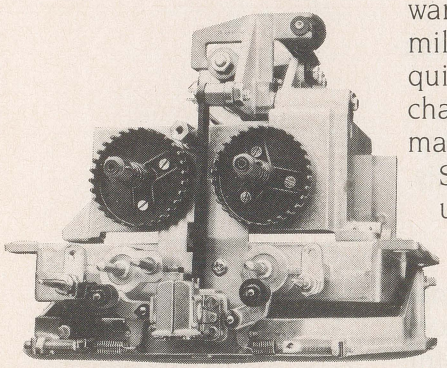
Studer Revox of Switzerland, the world's leading manufacturer of professional audio equipment, has introduced a professional-quality cassette recorder specifically designed for the serious home recordist.

If you are interested in making the finest recordings possible in the cassette medium, we invite you to carefully consider the following three pages...

Enter No. 76 on Reader Service Card

R E V O X

Revox cassette transport turns pro.



For consistently superior results in home audio recording, we designed a professional tape transport into the Revox B215 Cassette Deck.

Studer Revox is the leading supplier of audio tape decks to recording and broadcast studios. Every transport we build adheres to the same strictly professional design criteria. The B215 is no exception.

A Die-Cast Aluminum Alloy Chassis–Stamped or rolled metal is not acceptable because it could warp or bend and it cannot be milled or drilled with the required precision. The B215 chassis reflects the same massive stability seen in every Studer Revox recorder right up through our $70,000 24-track machines.

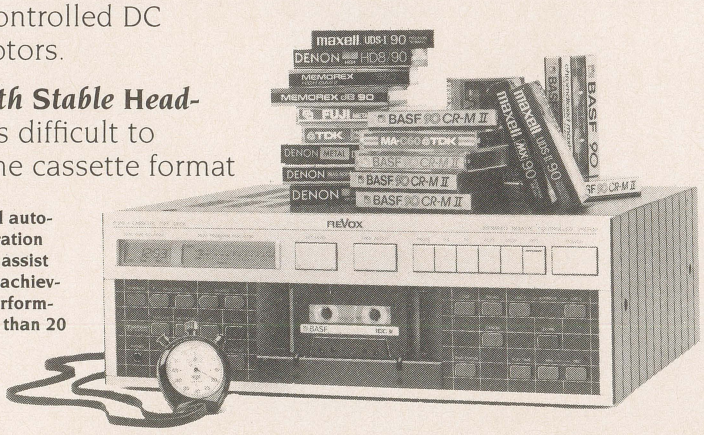
Direct Drive Motors–Belts and gears degrade performance over time. To avoid such compromises, the B215–and only the B215–has four tape drive motors: two quartz-locked Hall-effect motors for the dual capstans, and two microprocessor-controlled DC spooling motors.

An Azimuth Stable Headblock–This is difficult to achieve in the cassette format because the headblock must move in and out of the cassette shell. All other decks use an inherently unstable "sled" mechanism. But the B215 uses a pivoting die-cast headblock mounted on precision bearings (.001 mm tolerance) to assure the stability required.

Gentle, Safe Tape Handling–An on board microprocessor (one of three) monitors all tape motion. Optical servos govern the spooling motor to give constant winding speed, controlled tape tension, and smooth tape wrap. The motors gently slow the tape just before the end to prevent tape stretching. Tape damage of any kind is virtually impossible.

Most home recordists realize you should adjust the bias

The 20-second solution to your tape selection problems.



Professional automatic calibration procedures assist the B215 in achieving peak performance in less than 20 seconds.

B 2 1 5

when switching tape formulations. And most better cassette decks have facilities for this one adjustment. But as any recording professional would tell you, simply adjusting bias is a calibration compromise. For optimum performance in magnetic recording, three interdependent parameters must be precisely calibrated for each tape formulation: bias, record sensitivity, and equalization. In the studio this is done by a maintenance engineer who records a series of test tones, "tweaks" the adjustment pots, and checks the results.

The Microchip Engineer–With its powerful microprocessor and proprietory software, the B215 performs this calibration automatically in a mere 20 seconds. You simply press the red "align" button. The B215 records test tones (400 Hz, 4kHz, 17kHz), makes required adjustments through digital attenuator networks, and checks again. All three parameters–bias, record sensitivity, and equalization–are optimized for peak performance. Calibration data of up to six different tape formulations is stored in a non-volatile digital memory, for instant recall.

Level Setting Option–The B215 offers unique, automatic level setting. Simply play a loud passage of the music to be recorded while holding down the "level set" button. The B215 samples the incoming signal and sets the record level for the best overall performance. Manual level setting is also available.

Dolby® B/C And HX Pro–The B215 also provides Dolby B/C noise reduction and Dolby HX Pro headroom extension. Put it all together and you have everything you need for making the best possible recordings from today's best tape formulations–**all** of them, without compromise.

Right on Cue–A pro recorder always lets you know where you are on the tape, and then helps get you where you need to go quickly and accurately. B215 cueing features include:

- Automatic Cue to Tape Oxide–After rewind, the B215 cues past the clear leader to the beginning of tape.
- Real Time Counter–Under microprocessor control, the counter computes elapsed time even on a partially wound cassette.
- Two Memory Locate Buttons–Each quickly fast winds to any point you select.
- Record Start Locate–Every time you go into record, the start time is entered into Locate 1.

Essential Monitoring–Because the B215 has separate record and play heads, you can monitor your recording as you make it. Other

Features borrowed from "big brother."

The Revox B215 comes equipped to duplicate many advanced functions of studio recorders like our Studer A820.

Dolby is a registered trademark of Dolby Laboratories

monitoring features include:

- Automatic Tape/Source Switching–When you start recording, the B215 switches the output from source to tape monitoring. Manual override is possible, of course.
- Headphone Jack–Ample output power and volume control.

Automatic Fade-In/Out– Professional-sounding quick fades (2 second) from silence to full level.

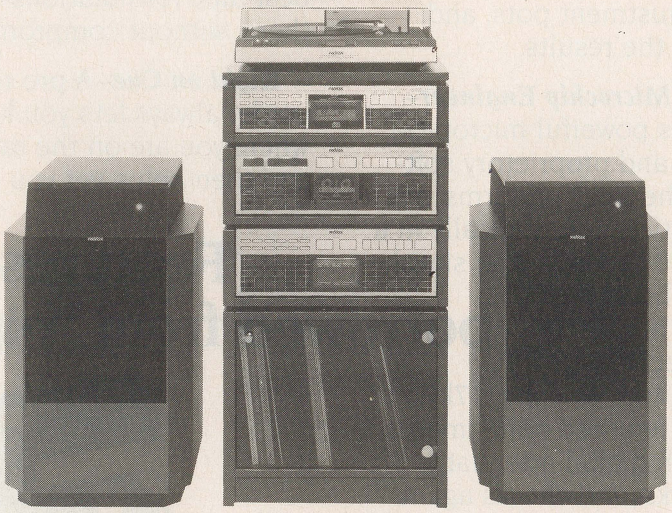
Playback Features

- LOOP–Repeats tape segments of any length.
- SAVE STATUS–Sets B215 to record or play when external timer comes on.

External Machine Control– The B215 responds to an optional infrared remote control transmitter. (The same unit also operates all other Revox components.) In addition, with an eye toward future computer controlled systems, the B215 can be controlled through its serial data port.

Revox delivers uncompromised quality to cassette recording. Our sophisticated mircroprocessor controls offer professional recording capabilities and standards to the home audio enthusiast. Our professional transport design brings home extraordinary performance: low wow and flutter, extended frequency response, and consistently repeatable results time after time, year after year.

How well we accomplish our job is for you to judge. If you are interested in making cassette recordings of the finest quality, we invite you to evaluate the B215 at your nearest Revox dealer. For more information contact Studer Revox America, Inc., 1425 Elm Hill Pike, Nashville, TN 37210/(615) 254-5651.



The complete Revox remote control system delivers performance with convenience–a unique achievement in its class.

STUDER REVOX

1986 ANNUAL EQUIPMENT DIRECTORY

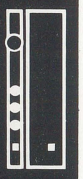
This year's Annual Equipment Directory is our 29th, and it has again grown larger—to more than 4,200 products in 20 categories. Our best estimate is that nearly 80,000 individual specifications are included in the 1986 Directory. For several years now, we have neglected to emphasize sufficiently in these introductions that the specifications listed come from the manufacturers; they are not the results of our tests in the laboratory. While a suspicious person might quickly come to the conclusion that certain figures may be the product of some company loyalist's fertile imagination, it is my belief that the very large majority of the gear presented here is underrated. The reason I think this is because virtually all equipment we bring to the bench passes the "Meet spec?" test with flying colors. Further, there are always some few signs when a unit has been tweaked up, and ringers are usually painfully obvious.

I mentioned that we have some 20 equipment categories this year; that's up one from the last Directory. The new one, Ambience & Surround-Sound Processors, is actually a category that's been around for a good while, but there presently seems to be a new impetus in the marketplace and increased interest from hobbyists. The principal reason for this step-up of activity is, I believe, the application of digital technology. Insofar as the end-user is concerned, there will soon be much more versatile equipment available, affording much cleaner sound. While some of the previous applications have seemed almost trivial offshoots of CD and R-DAT technologies, we are expecting some rather spectacular innovations in the not-very-distant future.

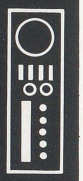
It has always been interesting to me to follow the rise and fall of various equipment categories, thus charting the changing interests of our audio-buff friends. Indulge an aging editor his fancy, then, as I rapidly run through the differences from 1985 to 1986 in some of the categories of major components. Amps are up 8 models to 414; preamps are plus 31 to 276; tuners down 6 to 91; receivers virtually unchanged at 124 (actually −2); there are about 25% fewer turntables (−58) in 1986 for a new total of 187; however, tonearms are unchanged at 60 and cartridges down only 5

Photograph: ©1986, Douglas Dubler Studios

DIGITAL PROCESSORS
COMPACT DISC PLAYERS



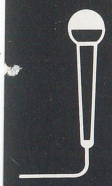
AMPLIFIERS
PREAMPLIFIERS



TUNERS
RECEIVERS

TURNTABLES
PHONO CARTRIDGES
TONEARMS

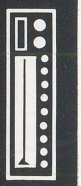
OPEN-REEL TAPE DECKS
CASSETTE DECKS
BLANK TAPE



MICROPHONES

HEADPHONES

EQUALIZERS / AMBIENCE & SURROUND-SOUND PROCESSORS / SIGNAL PROCESSORS / CROSSOVERS



HI-FI VCRs

LOUDSPEAKERS

models at 378; speakers are again the big gainer with 113 additional models and 12 additional manufacturers in the category; open-reel tape decks are down 6 models and 2 makers, and cassette decks are down 9 units with the same number of brands. Perhaps the most closely watched area of equipment is CD players; we're up to 196 models—that's plus 79—offered by 69 manufacturers, which is 14 more than last year.

As is generally known, most hi-fi gear is made in the Far East, principally Japan, which has seen the value of the yen more than double over the past dozen years. This strengthening has been unpredictably vigorous over the course of the past year so that some manufacturers declined to provide prices. This is an odd switch, since price and model were the only things in many previous Directories that were solidly fixed. How times change! Even if the 150 to 160 yen-to-dollar range is maintained, I do not think that we will see very many new American hi-fi companies started. It seems more likely to me, if this rate holds steady over the next few years, that we will see reduced competition in this industry in Japan and that some of those remaining firms will open manufacturing plants in this country. We have already seen this happen in blank tape and TVs, as well as outside our field in automobiles.

Final notes: We are using a symbol system this year to help locate the various sections within the Directory, grouping together those components which are functionally similar. The result is the 10 symbols shown at the side of this page. Note that the symbols are staggered down the page; this relative location will be maintained in the Directory proper. Since remote controls are becoming more and more popular, we asked the makers to add (RI) after the model number if they offered the unit with a remote control as a standard, no-extra-cost feature; the code for optional was (RO). We didn't bother with this coding in Hi-Fi VCRs, where all units have remote controls as standard items. Company addresses have returned to the end of the issue.

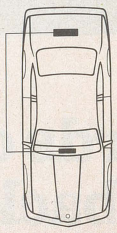
Special thanks to Bill Kirkpatrick, who sacrificed his eyes to small type, and Linda Zerella, who sacrificed her fingers to X-acto knives, that others might have this issue of the Big D.—**E.P.**

Loaded.

Fully loaded.

Introducing the Sony DiscJockey.™ The world's first car compact disc changer. Leave it to Sony to give new meaning to the term "loaded." They've just taken the conventional car compact disc player and turned it into the ultimate automotive entertainment system. Through an ingenious Remote Commander,® Sony has put you in control of 10 discs. Program any disc, any track, in any order you choose. All this and an AM/FM tuner.*

As for high performance, the special 10-disc changer delivers up to 10 hours of incomparable digital sound. Its suspension maintains precise disc tracking under the most torturous road conditions. And it's located in a most unlikely and secure place—the trunk of your car. The Sony DiscJockey. The car stereo destined to become standard equipment for those who have very high standards.



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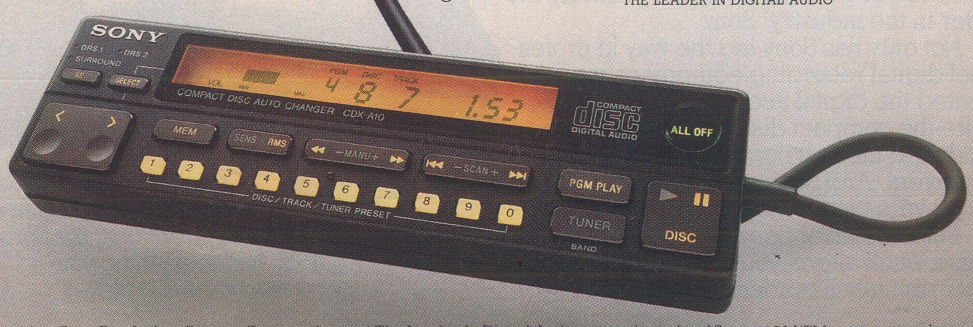
THE LEADER IN DIGITAL AUDIO™



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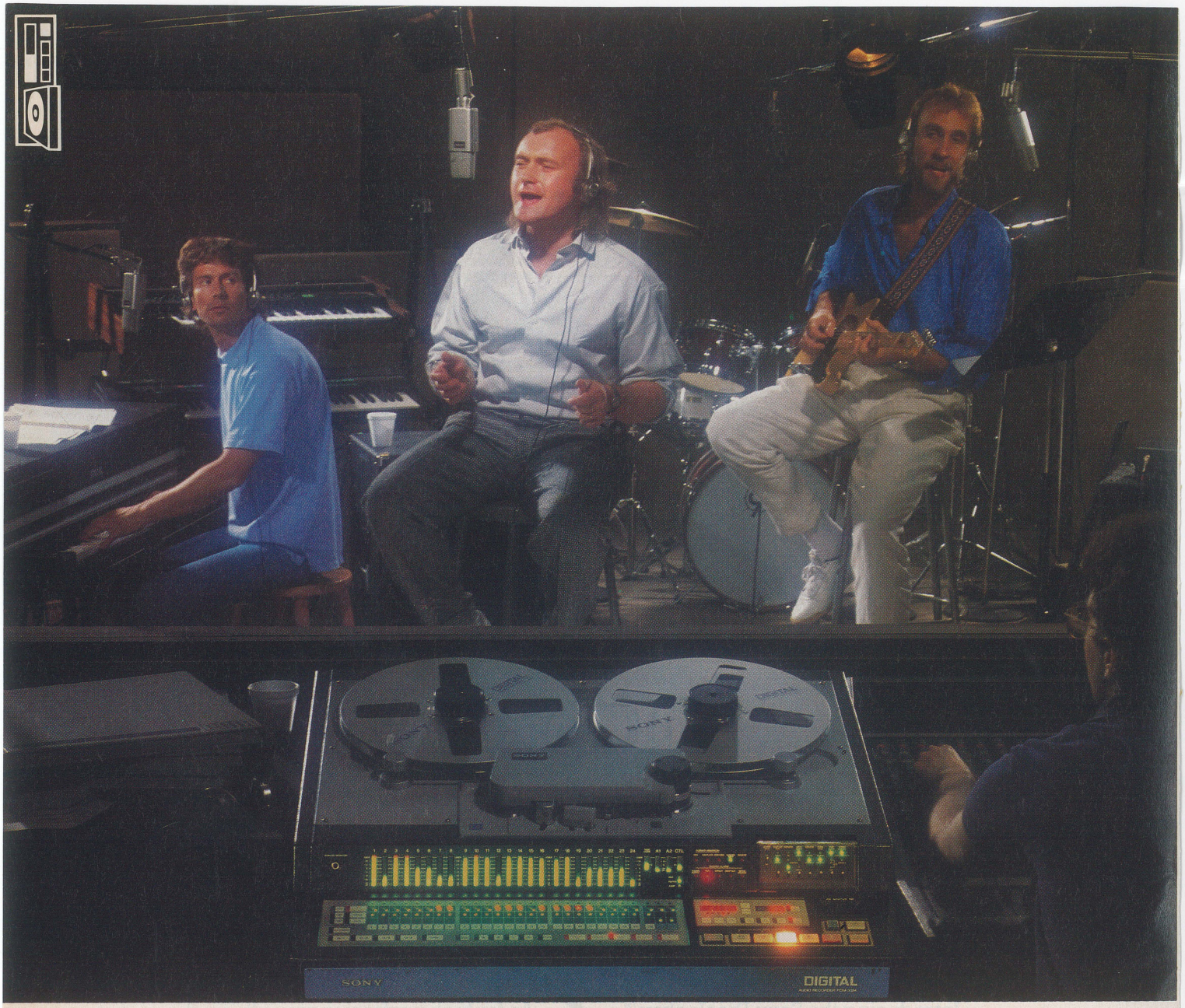

To hear why Genesis records on Sony digital equipment, play them back on a Sony Compact Disc Player.

When it comes to capturing the experience of live music, no audio equipment delivers the lifelike reproduction of digital audio.

That's why the only digital recording equipment chosen by Phil Collins, Tony Banks and Mike Rutherford of Genesis is, not surprisingly, the leader in the industry: Sony.

Not only has Sony led the way in professional digital recording equipment, we invented the digital audio system for playback—the compact disc player. Sony also introduced the first home, car and portable CD players. And Sony sells more types of compact disc players than anyone else in the world.

But whichever Sony Compact Disc Player you choose, each allows you to hear the music the way the artist originally intended.

So why not do what Genesis does? Play back the top-selling compact discs like "Invisible Touch" the way they were mastered. On Sony Digital equipment. You'll find that when it comes to bringing you close to the music, nothing even comes close.

The Sony CDP-55. Sony's best value in a full-featured compact disc player.

From its Unilinear Converter and digital filter to its programming flexibility and supplied Remote Commander® unit, the Sony CDP-55 has everything you need in a home CD player.

SONY®
THE LEADER IN DIGITAL AUDIO™

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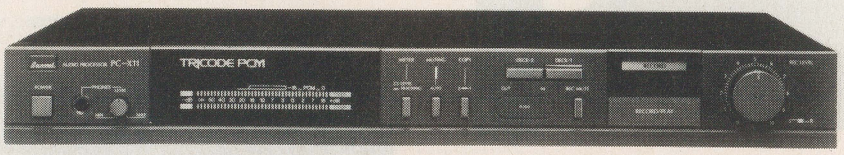
DIGITAL PROCESSORS

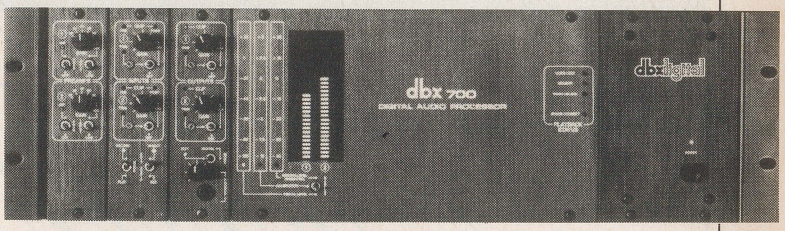
SONY PCM-501ES

SONY PCM-F1



SANSUI PC-X11

SONY PCM-601ESD

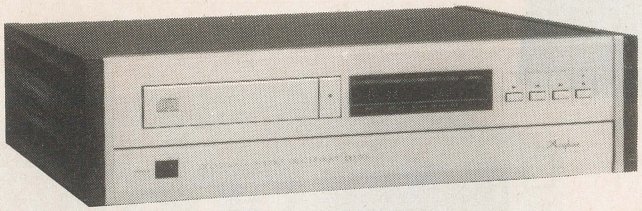


DBX 700

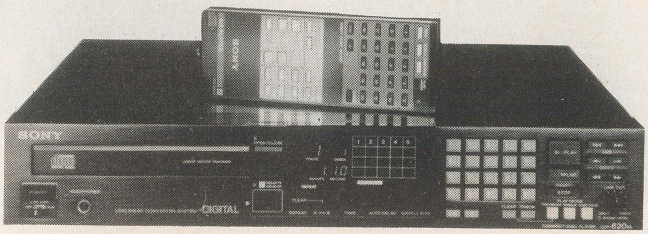
VCR SPEED CODE
A—Beta II & VHS SP
B—Beta III & VHS LP or EP

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Unit Type: Recorder = R, Processor = P, Both = RP	II Recorder, Tape Format Type	Coding Format	Quantization: No. of Bits; Linear = L, Floating Point = F	Maximum Recording Time, Minutes	VCR Speed Capability—See Code	Frequency Response, Hz to kHz, ±dB	Dynamic Range, dB	Total Harmonic Distortion, %	Inputs: Mike = M, Line = L, Direct Digital = D, Video Composite = V	Outputs: Headphone = H, Line = L, Digital Video = V	Dimensions, Inches	Weight, Lbs.	Price, $	Notes
DBX	700	P		dbx CPDM	†		A/B	10-20 ±0.5	110	0.005	MLDV	HLV	17 x 5½ x 12	40	4600.00	†Companded Predictive Delta Modulation. Optional mike preamps and disc-mastering delay.
SANSUI	PC-X11	P		EIAJ	14L		A/B	5-20	86	0.007		HLV	17 x 2¼ x 12⅜	11	1150.00	
SONY	PCM-F1	P		EIAJ	14L, 16L	120	A	10-20 ±0.5	90	0.005	MLDV	HL	8½ x 12 x 4	9	1750.00	Portable; d.c. operation.
	PCM-501ES	P		EIAJ	14L, 16L	480	A/B	10-20 ±0.5	90	0.005	LDV	HL	17 x 4 x 14	15	800.00	Optimum Video Condition control for slow-writing-speed VCRs.
	PCM-601ESD	P		EIAJ	14L, 16L	480	A/B	10-20 ±0.5	90	0.005	LDV	HL	17 x 4 x 14½	18	1400.00	As above; digital input/output port.

COMPACT DISC PLAYERS

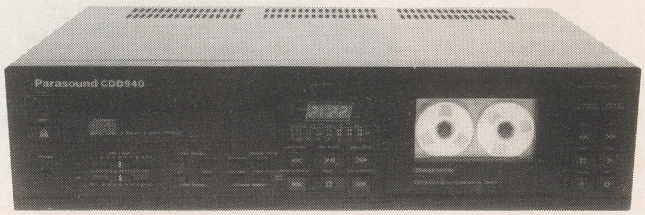


ACCUPHASE DP-80



SONY CDP-620ES

MAGNAVOX CDB650BK



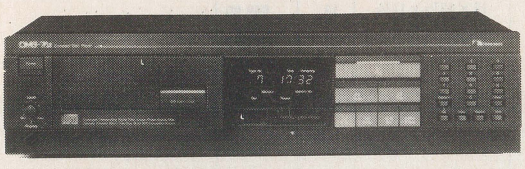
PARASOUND CDD-940

MANUFACTURER	Model	Frequency Response, Hz to kHz, ±dB	Dynamic Range, dB	S/N Ratio, −dB	Channel Separation, dB, at 1 kHz	Harmonic Distortion, %, at 1 kHz	Line Output Level, V, Fixed=F	Required (Amplifier Input) Load Impedance, Kilohms	Headphone Output=H, Headphone Output with Level Control=HL	Loading: Single Disc=A, Single-Disc Magazine=B, Multi-Disc=C	Dimensions, Inches	Weight, Lbs.	Price, $	Notes
ACCUPHASE	DP80/DC81	4-20 ±0.3	106	106	100	0.008	2.5F, 0-2.5	10		A		66	7000.00	Two chassis; separate transport and electronics.
ADC	16/2R	20-20 +0.5, -1	96	95	90	0.007	F		None	A	17 x 3½ x 11½	11	370.00	
	CD100X				90						13½ x 3½ x 11½	9	299.00	
ADCOM	GCD-300	5-20 ±0.5	96	98	90	0.004	2.5F			A	17 x 10½ x 3¼	12	499.95	Sound Window frequency-contour selector.
	GCD-200	5-20 ±0.5	96	98	90	0.004	2.5F			A	17 x 10½ x 3¼	12	449.95	As above.
ADS	CD3	20-20 ±0.25	96	102	86		2.0F, 0-3	10	HL	A	17½ x 14¼ x 2¾	20	1250.00	
	CD4	20-20 ±0.25	96	102	86		2.0F	10	HL	A	17½ x 14¼ x 2¾	20	900.00	
AKAI	CD-A70	5-20 ±0.5	95	95	90	0.003	2F		HL	A	17¼ x 3⅛ x 10¼	8⅝	475.00	
	CD-A3X	5-20 ±0.5	90	90	86	0.006	2F		H	A	17¼ x 3⅛ x 10¼	7¾	350.00	
	CD-A30	5-20 ±0.5	90	90	86	0.006	2F			A	17¼ x 3⅛ x 10¼	7¾	340.00	
	CD-M515	5-20 ±0.5	90	90	86	0.006	2F			A	13¾ x 3⅜ x 10¼	7	340.00	
AR	CD-04	20-20 ±0.15	105	96	94	0.003	F	10		A			479.95	
AUDIOQUEST	AQ CD-1						2.0F		H	A	16½ x 3½ x 11¾	12	650.00	
	AQ TCD-10						2.0F		HL	A		17	1250.00	
AUDIO-TECHNICA	AT-CD20	4-20 ±0.5	96	100	92	0.003	2F		HL	A	17⅛ x 11½ x 3¾	10	399.95	

COMPACT DISC PLAYERS

REVOX B225

ADS CD3



NAKAMICHI OMS-7AII

AUDIO-TECHNICA AT-CD20

MANUFACTURER	Model	DISPLAY FUNCTIONS: Elapsed Time: From Disc Start=D, From Track Start=T, Both=B	Remaining Time: To Disc End=D, To Track End=T, Both=B	Track/Program Selection Number?	Index Display?	Program-Recall Display?	Programmable: Number of Selections; Random=R, Sequential=S	Repeat Functions: Entire Disc=D, Track=T, User-Marked Phrase=P, Entire Program=E	ACCESS FUNCTIONS: Random Access By Time Within Track?	Access by Index Code?	Maximum Access Time, Seconds	Audible Fast Search?	Auto Scan of Track Beginnings?	Remote Control Type: Infrared=I, Wired=W, Gives Confirmation Beep=B	No. of Remote Control Functions	Output Level Control?	Decoding System: 16 Bit=A, 14 Bit Oversampling=B, 16 Bit Oversampling=C	Filtration: Analog Only=A, Digital Plus Analog=D	Notes
ACCUPHASE	DP80/DC81			Yes	Yes	Yes					1			I		Yes	C	D	Dual D/A converters.
ADC	16/2R	B	B	Yes	No	Yes	16R	D/T/E	No	Yes		No	No	I	All	No	A	A	Without remote. Model 16/1, $330.00.
	CD100X		No	Yes	No	No	16R		No	No		No	No	I					
ADCOM	GCD-300	T		Yes	Yes		15R	D/T/E				Yes		I	19	No	A	A	Linear phase-correcting circuit.
	GCD-200	T			Yes		15R	D/T/E				Yes				No	A	A	As above.
ADS	CD3	T	D	Yes	Yes	Yes	30R	D/T/P/E	Yes	Yes	4	Yes	No	I		Yes	C	D	
	CD4	T	D	Yes	Yes	Yes	16R	D/T/P/E	Yes	Yes	3	Yes	No	I	5	No	C	D	
AKAI	CD-A70	B	No	Yes	Yes	Yes	†	D/T/P/E	No	Yes	2.6	Yes	No	I	32	Yes	C	D	†32 random selections, unlimited sequential.
	CD-A3X	B	No	Yes	Yes	Yes	36R	D/T/P/E	No	Yes	2.6	Yes	No	None		No	C	A	
	CD-A30	B	No	Yes	Yes	Yes	36R	D/T/P/E	No	Yes	2.6	Yes	No	None		No	C	A	
	CD-M515	B	No	Yes	Yes	Yes	36R	D/T/P/E	No	Yes	2.6	Yes	No			No	C	A	
AR	CD-04	B	B	Yes	Yes	No	99R	D/T	Yes	Yes		Yes	Yes	I	8	No	B	D	Dual D/A converters; single-beam laser.
AUDIOQUEST	AQ CD-1			Yes			20R	D	No			Yes	No			No	B	D	
	AQ TCD-10			Yes			20R	E				Yes		I	8		C	D	Tube design.
AUDIO-TECHNICA	AT-CD20	T		Yes	Yes	Yes	9	D/T/P	No	Yes	2	Yes	No	I	15	No	C	D	

COMPACT DISC PLAYERS

MANUFACTURER	Model	Frequency Response, Hz to kHz, ±dB	Dynamic Range, dB	S/N Ratio, −dB	Channel Separation, dB, at 1 kHz	Harmonic Distortion, %, at 1 kHz	Line Output Level, V; Fixed = F	Required (Amplifier Input) Load Impedance, Kilohms	Headphone Output = H, Headphone Output with Level Control = HL	Loading: Single Disc = A, Single-Disc Magazine = B, Multi-Disc = C	Dimensions, Inches	Weight, Lbs.	Price, $	Notes
A.V.A.	Transcendence	2-20 ±0.1	100	100	100	0.001	2.0F		H	A	16½ x 11⅞ x 3¾	11	795.00	
BANG & OLUFSEN	CD-50	4-20 ±0.3	95	95	94	0.0003	2F		None	A	16½ x 3 x 12¾	17.8	999.00	
	CDX	3-20 ±0.3	96	96	94	0.0003	2F		None	A	16½ x 3 x 12¼	13.4	699.00	
CALIFORNIA AUDIO LABS	Tempest	5-20 +0, -0.5	105	100	96	0.05	2F			A	19 x 11 x 5½	17.6	1895.00	
CAMBRIDGE	CD1	10-20 ±0.5	110	110	115	0.002	4.2F, 0-4.2			A		37	2500.00	Dual chassis.
CARVER	DTL-200	5-20 ±0.1	100	100	90	0.007	2F			A	19 x 13½ x 11¼	13	699.00	
	DTL-100	5-20 ±0.3	96	96	86	0.05	1.9F			A	19 x 3½ x 11¼	13	650.00	
	DTL-50	5-20 ±0.5	94	95	84	0.008	2F			A	17 x 3 x 11¼	10	549.00	
CURTIS MATHES	AP500	4-20 ±0.3	96	100	100	0.003	2.0F	10	None	A	17 x 10½ x 3	9.3		
DBX	DX3	10-20 +0.5, -1	96	100	90	0.002	F	1		A	17 x 3½ x 11½	10	599.00	
DENON	DCD-500	5-20 ±0.5	95	95	90	0.004	2F	10	H	A	17 x 12 x 3⅝	8	330.00	
	DCD-700	5-20 ±0.5	95	95	90	0.004	2F	10	HL	A	17 x 12 x 3⅝	8	400.00	
	DCD-1300	5-20 ±0.3	95	96	90	0.003	2F	10	HL	A	17 x 14 x 3½	12	550.00	
	DCD-1500	5-20 ±0.3	96	96	95	0.0025	2F, 0-2	10	HL	A	17 x 14 x 3½	12	650.00	
DISTECH	LSI MKII	20-20 ±0.3	110	110	103	0.004	2.0F, 0-2.0	10	None	A	16½ x 11⅞ x 3½	16½	1195.00	
FISHER	AD922B			90	80	0.006				A	15 x 3.4 x 11	13	249.95	
	AD924B			90	80	0.006				A	17 x 3.4 x 11	13	249.95	
	AD815B			90	80	0.006			HL	A	17 x 3.4 x 11	8.6	299.95	
GENERAL ELECTRIC	11-4800	5-20 ±5	93	93	90	0.005	1.8F		None	A	17⅛ x 2⅞ x 10½	9½	229.99	
	11-4911	5-20 ±5	93	93	90	0.005	1.8F		None	A	17⅛ x 2⅞ x 10½	9½	269.99	
GOLDSTAR	GCD-616	5-20 ±1.5	90	90	85	0.03	2.0F			A	16.9 x 3 x 15	11	249.95	
HARMAN/KARDON	HD300	4-20 ±0.5	94	100	83	0.01	F	10		A	17⅜ x 4 x 14	12⅛	575.00	
HITACHI	DA6000	5-20 +0.5, -1	95	95	90	0.004	2.5F			A	14½ x 2⅞ x 10⅜	9	300.00	
	DA400	5-20 +0.5, -1	95	95	92	0.003	2.5F			A	17⅛ x 2⅞ x 10⅜	10	330.00	
	DA401	5-20 +0.5, -1	95	95	92	0.003	2.5F			A	17⅛ x 2⅞ x 10⅜	10	400.00	
	DA405	5-20 +0.5, -1	95	95	92	0.003	2.5F			A	17⅛ x 2⅞ x 10⅜	10	450.00	
	DA6001	5-20 +0.5, -1	95	95	90	0.004	2.5F			A	14½ x 2⅞ x 10⅜	9	350.00	
	DA005	5-20 ±0.5	96	97	95	0.0025	2.5F		HL	A	17⅛ x 3¾ x 10⅜	11	800.00	
	DA007	5-20 ±0.5	95	95	92	0.003	2.5F		HL	A	14½ x 3½ x 6⅜	10	1000.00	
	DAP100	5-20	90	90	85	0.008	2.0F		HL	A	7½ x 1⅝ x 6⅜	2⅝	350.00	
JVC	XL-V1100BK	2-20	96	98	95	0.0025	2F, 0-2		HL	A	17¼ x 14⅞ x 3⅞	17.7		
	XL-M700BK	5-20	95	93	90	0.004	2F		H	C	17¼ x 12⅛ x 4⅜			
	XL-V440BK	5-20	95	93	90	0.004	2F		HL	A	17¼ x 11⅜ x 3¼	7.3		
	XL-V330BK	5-20	95	93	90	0.004	2F		HL	A	17¼ x 11⅜ x 3¼	7.3		
	XL-V220BK	5-20	95	93	90	0.004	2F		HL	A	17¼ x 11⅜ x 3¼	7.3		
KENWOOD	DP-1000	4-20 ±0.5	95		95	0.0015	2.0F		HL	A	17⅜ x 12⅜ x 3½	13.2	510.00	
	DP-850	5-20 ±1	92		90	0.004	1.6F		H	A	16⅝ x 12¼ x 3	9.7	315.00	
	DP-750	5-20 ±0.5	96		90	0.003	2.0F		HL	A	16⅝ x 12¼ x 3⅛	9.7	255.00	
KINERGETICS	KCD-20	2-20 ±0.5	100	100	94	0.003	0-2.0	5		A	19 x 3¾ x 15	25	850.00	External power supply.
KYOCERA	DA-910	5-20 ±0.5	90	95	90	0.005	Sel.	1	H	A	17 x 15½ x 13	22	1600.00	
	DA-710CX	5-20 ±0.5	95	95	90	0.005	2F	1	HL	A	18⅛ x 3¼ x 12⅛	19	750.00	
	DA-610CX	5-20 ±0.5	90	90	90	0.005	2F	1	HL	A	18⅛ x 3¼ x 12⅛	18	550.00	

COMPACT DISC PLAYERS

MANUFACTURER	Model	DISPLAY FUNCTIONS: Elapsed Time: From Disc Start=D, From Track Start=T, Both=B	DISPLAY FUNCTIONS: Remaining Time: To Disc End=D, To Track End=T, Both=B	DISPLAY FUNCTIONS: Track/Program Selection Number?	DISPLAY FUNCTIONS: Index Display?	DISPLAY FUNCTIONS: Program-Recall Display?	DISPLAY FUNCTIONS: Programmable: Number of Selections; Random=R, Sequential=S	DISPLAY FUNCTIONS: Repeat Functions: Entire Disc=D, Track=T, User-Marked Phrase=P, Entire Program=E	ACCESS FUNCTIONS: Random Access By Time Within Track?	ACCESS FUNCTIONS: Access by Index Code?	ACCESS FUNCTIONS: Maximum Access Time, Seconds	ACCESS FUNCTIONS: Audible Fast Search?	ACCESS FUNCTIONS: Auto Scan of Track Beginnings?	Remote Control Type: Infrared=I, Wired=W, Gives Confirmation Beep=B	No. of Remote Control Functions	Output Level Control?	Decoding System: 16 Bit=A, 14 Bit Oversampling=B, 16 Bit Oversampling=C	Filtration: Analog Only=A, Digital Plus Analog=D	Notes
A.V.A.	Transcendence	T		Yes	Yes	No	20R	D/T/E	Yes		2	Yes	No	None		No	C	D	Discrete analog output stage.
BANG & OLUFSEN	CD-50	B		Yes	Yes	Yes	99R	D/T/E	No	Yes		No	Yes	Opt., I	13	No	C	D	
	CDX	B		Yes	Yes	Yes	40R	D/T/E	No	No		No	No	None		No	B	D	Dual D/A converters.
CALIFORNIA AUDIO LABS	Tempest	B	B	Yes	Yes	Yes	20R	D/T/E	No	No	3	Yes	No	Opt., I	8	No	B	D	Tube analog section.
CAMBRIDGE	CD1	T		Yes	Yes	Yes	20R	D/T/E	No	Yes	2	No	No	None			C	D	Three D/A converters per channel; two power supplies.
CARVER	DTL-200	B	B	Yes	Yes	Yes	29	D/T/P/E	Yes		1	Yes		I	23		C	D	Time-domain correction; 121st-order filter.
	DTL-100	B	B	Yes	Yes	Yes	29	D/T/P/E	Yes		1	Yes					C	D	Includes Digital Time Lens.
	DTL-50	B	B	Yes	Yes	Yes	29	D/T/P/E	Yes		1	Yes		I	11		C	D	As above.
CURTIS MATHES	AP500	B	B	Yes	Yes	Yes	20R	D/T/E	Yes	Yes	2	Yes	No	Opt., I	4	No	A	A	
DBX	DX3	B		Yes	Yes	Yes	9R	D/T/E	No	No		Yes	No				C	D	OverEasy compression, Ambience control, and Digital Audio Impact Recovery circuitry.
DENON	DCD-500	B	T	Yes		Yes	15R	D/E			2	Yes					A	A	
	DCD-700	B	T			Yes	15R	D/E			2	Yes		I	24		A	A	
	DCD-1300	B	B	Yes	Yes	Yes	20R	T/P		Yes	2	Yes		I	27		C	D	Double oversampling; subcode output jack.
	DCD-1500	B	B	Yes	Yes	Yes	20R	T/P		Yes	2	Yes		I	29	Yes	C	D	As above.
DISTECH	LSI MKII	B	T	Yes	Yes	Yes	20R	D/T	No	No		No	Yes	None		Yes	B	D	
FISHER	AD922B	D		Yes	Yes	Yes	16R	D/T/P/E	No	Yes		Yes	No				A	D	
	AD924B	D		Yes	Yes	Yes	16R	D/T/P/E	No	Yes		Yes	No				A	D	
	AD815B	D	B	Yes	Yes	Yes	8R	D/T/P/E	No	Yes		Yes	No	I	6		A	D	
GENERAL ELECTRIC	11-4800	B	No	Yes	Yes	No	16S	D/T/P/E	No	Yes	6	Yes	No			No	A	A	
	11-4911	B	No	Yes	Yes	No	16R	D/T/P/E	No	Yes	6	Yes	No	I	7	No	A	A	
GOLDSTAR	GCD-616	T		Yes	Yes	Yes	9R	D/E	No	Yes		Yes	No			No	A	D	
HARMAN/KARDON	HD300			Yes	No	No	15R	D/T/P/E	No	No		Yes	No	I	13	No	C	D	
HITACHI	DA6000	T		Yes	Yes		15R	D/T/P/E	No	Yes	2	Yes	No	None		No	A	A	
	DA400	T		Yes	Yes		15R	D/T/P/E	No	Yes	2			None		No	A	A	
	DA401	T		Yes	Yes		15R	D/T/P/E	No	Yes	2			I	18	No	A	A	
	DA405	T		Yes	Yes		15R	D/T/P/E	No	Yes	2	Yes	No	I	20	Yes	A	A	Remote has volume control.
	DA6001	T		Yes	Yes		15R	D/T/P/E		Yes	2	Yes		I	11		A	A	
	DA005	T	D	Yes	Yes	Yes	15R	D/T/P/E	Yes	Yes	2		Yes	I	28		C	D	
	DA007	T		Yes	Yes		15R	D/T/P/E		Yes	2	Yes		None		Yes	A	D	
	DAP100	T	No	Yes	Yes		15R	D/T			3	Yes		None		Yes	A	A	
JVC	XL-V1100BK	B	D	Yes	Yes	Yes	15R	D/P	Yes	Yes		Yes	Yes	I	21	Yes	C	D	
	XL-M700BK	B		Yes		Yes	32R	D/E	Yes			Yes	Yes	I	24		C	D	
	XL-V440BK	T		Yes			15R	D/E	Yes			Yes	No	I	14		C	D	
	XL-V330BK	T		Yes			15R	D/E	Yes			Yes	No	I	14		C	D	
	XL-V220BK	T		Yes			15R	D/E	Yes			Yes	No	None			C	D	
KENWOOD	DP-1000	B	D	Yes	Yes	Yes	16R	D/P/E	No	Yes	3	Yes	No	I	14	No	A	A	
	DP-850	T	D	Yes	No	Yes	16R	D/E	No	No	3	No	No	Opt.	3	No	A	A	
	DP-750	B	D	Yes	No	Yes	16R	D/E	No	No	3	Yes	No			No	A	A	
KINERGETICS	KCD-20	T	No	Yes	No	Yes	20R	E	No	No	3	Yes	No	I	9	Yes	C	D	
KYOCERA	DA-910	T	D	Yes	Yes	Yes	24R	D/E	No	Yes	3½	Yes	No	I	8	Yes	C	D	
	DA-710CX	T	B	Yes	Yes	Yes	24R	D/T/P/E	No	Yes	4	Yes	No	I/B	39	No	C	D	Ceramic guides for laser head mechanism.
	DA-610CX	T	D	Yes	No	Yes	16R	D/E	No	No	4	Yes	No	I/B	24	No	A	A	

COMPACT DISC PLAYERS

MANUFACTURER	Model	Frequency Response, Hz to kHz, ±dB	Dynamic Range, dB	S/N Ratio, –dB	Channel Separation, dB, at 1 kHz	Harmonic Distortion, %, at 1 kHz	Line Output Level, V; Fixed = F	Required (Amplifier Input) Load Impedance, Kilohms	Headphone Output = H, Headphone Output with Level Control = HL	Loading – Single Disc = A, Single-Disc Magazine = B, Multi-Disc = C	Dimensions, Inches	Weight, Lbs.	Price, $	Notes
LUXMAN	D-100	5-20 +0, -0.5	90	91	85	0.005	2.0F	10	HL	A	17¼ x 3⅜ x 13	9.7	480.00	
	D-102	5-20 +0, -0.5	91	91	88	0.004	2.0F	10		A	17¼ x 3⅜ x 13	9.9		
	D-109	5-20 +0, -0.5	96	96	95	0.003	2.0F	10		A	17¼ x 4 x 15⅜	23.2		
	D-404	5-20 +0, -0.5	96	96	90	0.003	2.0F	10	HL	A	17⅞ x 3⅜ x 12⅜	13.2	580.00	
	D-408	5-20 +0, -0.5	96	96	90	0.003	1.0F	10	HL	A	16⅝ x 6⅝ x 17⅝	34.7	1300.00	CD/LaserVision player.
	D-03	5-20 +0, -0.5	97	97	93	0.003	2.0F	10	HL	A	17⅞ x 3⅜ x 13	13.3	1500.00	
MAGNAVOX	FD1041BK	2-20 ±0.3	100	100	94	0.003	2F	10		A	12½ x 11¾ x 3½	7	269.00	
	FD1051BK	2-20 ±0.3	100	100	94	0.003	2F	10		A	12½ x 11¾ x 3½	7	319.00	
	FD2041BK	2-20 ±0.3	100	100	94	0.003	2F	10	H	A	12½ x 11¾ x 3½	8	279.00	
	CDB560BK	2-20 ±0.3	100	100	94	0.003	2F	10		A	16½ x 11¾ x 3½	8	329.00	
	CDB460BK	2-20 ±0.3	100	100	94	0.003	2F	10		A	16½ x 11¾ x 3½	8	279.00	
	CDB650BK	2-20 ±0.3	100	100	94	0.003	2F	10	HL	A	16½ x 11¾ x 3½	9	429.00	
	CDB360BK	2-20 ±0.3	100	100	94	0.003	2F	10		A	12½ x 11¾ x 3½	7	279.00	
MAN	MCD-1	5-20 ±0.5	96		90	0.003	2.0F			A	19½ x 3 x 12½	12	1490.00	
MARANTZ	CD152	5-20	96	96	90	0.005	2F		None	A	4 x 16½ x 12	9.5	330.00	
	CD50	5-20	96	96	90	0.005	2F		None	A	3 x 16½ x 11	7.7	400.00	
	CD74	4-20	96	96	90	0.004	2F		Yes	A	3½ x 16½ x 12	17.9	650.00	
McINTOSH	MCD7000	2-20 ±0.3	96	96	94	0.003	2.7F, 0-2.7	5	HL	A	16⅛ x 13 x 5½	22	1399.00	
MELOS AUDIO	CD-1	20-20 ±0.3	90	90	90	0.004	1.8F	10		A	16½ x 12 x 3½	17	850.00	
	CD-T	20-20 ±0.3	96	96	96	0.082	0.5-2.0	5		A	19 x 13 x 3½	28	1295.00	External power supply.
MERIDIAN	207 PRO	20-20 ±0.3								A			1500.00	Two chassis; separate transport and electronics.
MISSION	PCM 4000									A			699.00	
	PCM 7000R												999.00	
MITSUBISHI	DP-109	5-20 ±0.5	95	95	90	0.004	2.0F		None	A	2½ x 16¾ x 11	11	230.00	
	DP-209R	5-20 ±0.5	95	95	90	0.004	2.0F		HL	A	2½ x 16¾ x 11	11	280.00	
	DP-409R	5-20 ±0.5	94	98	98	0.003	2.0F		None	C†	16¾ x 4⅛ x 13⅜	16¾	500.00	†Five-disc changer.
NAD	5330	5-20 ±0.5		98	90	0.005	2.0F	1.2	None	A	16.5 x 3.3 x 12.2		348.00	
	5355	5-20 ±0.5		98	90	0.005	2.0F	1.2	None	A	16.5 x 3.3 x 12.2	10½	498.00	
NAKAMICHI	OMS-7AII	20-20 ±0.5	97	102	100	0.003	2.0F		HL	A	17⅛ x 3⅞ x 12⅛	15⅞	1650.00	
	OMS-5AII	20-20 ±0.5	97	102	100	0.003	2.0F			A	17⅛ x 3⅞ x 12⅛	15⅞	1375.00	
	OMS-4A	20-20 ±0.5	94	97	93	0.005	2.0F		HL	A	16⅞ x 3⅞ x 12⅝	15⅝	995.00	
	OMS-3A	20-20 ±0.5	92	95	90	0.006	2.0F		HL	A	16⅞ x 3⅞ x 12⅝	15⅝	699.00	
NEC	CD-500E	5-20 +0.5, -1	90	96	88	0.005	2.0F, 0-2.0	10	HL	A	17 x 3 x 10¾	9¾	329.00	
	CD-650E	5-20 +0.5, -1	92	96	86	0.006	2.0F, 0-2.0	10	HL	A	17 x 3 x 10¾	9¾	449.00	
	CD-607E	5-20 ±0.5	90	95	90	0.005	2.5F	10	HL	A	16⅞ x 3½ x 12⅝	11	449.00	
	CD-705E	5-20 ±0.5	90	95	90	0.005	2.5F	10	HL	A	17 x 4¾ x 14¼	22¾	649.00	
NIKKO	NCD-200R						0-5		HL	A			499.95	
	NCD-600						0-5		H	C†			4395.95	†Sixty-disc changer.
NUMARK	CD 9000	20-20 ±0.5	90	90	80	0.5	1.7F	10		B	19 x 5½ x 12	18½	1995.00	Variable pitch and tempo.
ONKYO	DX-320	2-20	96	96	93	0.003	2.0F		HL	A	17⅛ x 3⅝ x 14	13	580.00	
	DX-220	5-20	96	93	87	0.005	2.0F		HL	A	17⅛ x 3⅝ x 13¾	11	400.00	
	DX-120	5-20	96	93	87	0.03	2.0F			A	17⅛ x 3⅝ x 13¾	10	300.00	
PANASONIC	SL-NP10	4-20 +0.5, -1	90	90	90	0.004			HL	A	5 x ¾ x 5		299.95	Portable; includes rechargeable battery pack.
	SL-NP20	4-20 +0.5, -1	90	90	90	0.004			HL	A	5 x 1⅛ x 5		349.95	As above plus AM/FM tuner.
	SL-P3620	4-20 ±0.3	96	100	100	0.003			None	A	16⅞ x 3 x 10⅜	9.3	270.00	
PARASOUND	CDD-940	5-20 ±0.5	100	95	90	0.003	2F	10	H	A	17¼ x 3¾ x 10	16	499.95	Cassette deck/CD player; see also "Cassette Decks."

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COMPACT DISC PLAYERS

MANUFACTURER	Model	DISPLAY FUNCTIONS: Elapsed Time: From Disc Start=D, From Track Start=T, Both=B	DISPLAY FUNCTIONS: Remaining Time: To Disc End=D, To Track End=T, Both=B	DISPLAY FUNCTIONS: Track/Program Selection Number?	DISPLAY FUNCTIONS: Index Display?	DISPLAY FUNCTIONS: Program-Recall Display?	DISPLAY FUNCTIONS: Programmable: Number of Selections; Random=R, Sequential=S	ACCESS FUNCTIONS: Repeat Functions: Entire Disc=D, Track=T, User-Marked Phrase=P, Entire Program=E	ACCESS FUNCTIONS: Random Access By Time Within Track?	ACCESS FUNCTIONS: Access by Index Code?	ACCESS FUNCTIONS: Maximum Access Time, Seconds	ACCESS FUNCTIONS: Audible Fast Search?	ACCESS FUNCTIONS: Auto Scan of Track Beginnings?	Remote Control Type: Infrared=I, Wired=W, Gives Confirmation Beep=B	No. of Remote Control Functions	Output Level Control?	Decoding System: 16 Bit=A, 14 Bit Oversampling=B, 16 Bit Oversampling=C	Filtration: Analog Only=A, Digital Plus Analog=D	Notes
LUXMAN	D-100	T	B	Yes	No	Yes	16R	D/T/E	No	No			No	I	6	No	A	A	
	D-102			Yes		Yes	16R							I		No	A	A	
	D-109			Yes			20R										A	D	
	D-404	T	D	Yes	No	Yes	8R	D/T/E	No	No			No	Opt., I	6	No	A	A	
	D-408	T	B	Yes	Yes			D/T/P	No	Yes		Yes	No	I	12	No	A	A	
	D-03		B	Yes	Yes		20R	D/T/E	No	Yes		Yes	Yes	I	7	No	A	A	
MAGNAVOX	FD1041BK	T		Yes	No	Yes	20R		No	No	3	Yes	No			No	B	D	
	FD1051BK	T		Yes	No	Yes	20R	D/T/E	No	No	3	Yes	No	I	10	No	B	D	
	FD2041BK	T		Yes	No	Yes	20R	D/T/E	No	No	3	Yes	No			No	B	D	
	CDB560BK	T		Yes	Yes	Yes	20R	D/T/E	No	No	1	Yes	No	I	10	No	C	D	Subcode output jack.
	CDB460BK	T		Yes	Yes	Yes	20R	D/T/E	No	No	1	Yes	No			No	C	D	As above.
	CDB650BK	B	B	Yes	Yes	Yes	20R	D/T/E	Yes	Yes	1	Yes	Yes	I	25	No	C	D	As above.
	CDB360BK	B	B	Yes	Yes	Yes	20R	D/T/E	No	No	1	Yes	No			No	C	D	As above.
MAN	MCD-1	T	D	Yes	Yes	No	16R	D/T/P/E	Yes	Yes	3	Yes	No	I	6	No	A	D	
MARANTZ	CD152	T		Yes	No	No	16R	D/T/P/E	No	No		Yes	No	I		No	A	A	
	CD50	T	D	Yes	Yes	Yes	16R	D/T	No	No		No	No	I		Yes	C	D	
	CD74	T	D	Yes	Yes	Yes	24R	D/T/P/E	No	Yes		No	No	I		Yes	B	D	
McINTOSH	MCD7000	B	No	Yes	Yes	Yes	20R	D/T/E	No	No	3	No	Yes	I/W	13/6	Yes	B	D	
MELOS AUDIO	CD-1	B	T	Yes	Yes	Yes	20R	D/T/E	No	No		No	No	None		No	B	D	
	CD-T	B	T	Yes	Yes	Yes	20R	D/T/E	No	No		Yes	No	I		Yes	C	D	Tube analog and filter sections.
MERIDIAN	207 PRO			Yes	Yes	Yes	99R	D/T/E		Yes	1	Yes	No	I		Yes		D	
MISSION	PCM 4000	B	B	Yes	Yes	Yes	20R	D/T/E	No	Yes	2	Yes	Yes			No	C	D	
	PCM 7000R	B	B	Yes	Yes	Yes	20R	D/T/E	No	Yes	2	Yes	Yes	I	12	Yes	C	D	Remote has volume control.
MITSUBISHI	DP-109	T	D	Yes	Yes	Yes	36R	D/T/E	No	Yes		Yes	No	None		No	A	A	
	DP-209R	T	D	Yes	Yes	Yes	36R	D/T/E	No	Yes		Yes	No	I	21	Yes	A	A	
	DP-409R	T	D	Yes	No	Yes	30R	D/T/E	No	No		Yes	No	I	16	No	A	A	
NAD	5330	T	D	Yes	Yes	Yes	No	No	No	No		No	No	None		No	A		
	5355	T	D	Yes	Yes	Yes	85	D	No	No		No		I	6	No	A		
NAKAMICHI	OMS-7AII	B	D	Yes	Yes	Yes	24R	D/E		Yes	3	Yes		I		No	C	D	
	OMS-5AII	B	D	Yes				D			3	Yes				No	C	D	
	OMS-4A	B	D	Yes		Yes	15R	D/E			3	Yes		I		No	C	D	
	OMS-3A	B	D	Yes		Yes	15R	D/E			3	Yes		I		No	C	D	
NEC	CD-500E			Yes	No	Yes	15R	D/E	No	No	3	No	No	I	10	Yes	A	A	
	CD-650E	T	D	Yes	No	Yes	15R	D/P/E	No	No	3	Yes	No	I	14	Yes	C	D	
	CD-607E	B	B	Yes	Yes	Yes	15R	D/T/E	No	No	3	Yes	No	I	10	No	C	D	
	CD-705E	B	B	Yes	Yes	Yes	15R	D/T/E	Yes	No	3	Yes	No	I	12	No	C	D	
NIKKO	NCD-200R	B	D	Yes	Yes	Yes	9R	D/T/P/E	No	No	3	Yes	No	I	12	No	C	D	
	NCD-600	T	No	Yes	No	No	5R	D/T/E	No	No	15	No	No	None		Yes	A	A	
NUMARK	CD 9000	T	B	Yes	Yes	Yes	99R	D/P/E	Yes	Yes		Yes	No	W	7	No	C	D	Remote has readout.
ONKYO	DX-320	T	D	Yes	Yes	Yes	16R	D/P/E	No	Yes	5	Yes	No	I	12	No	C	D	Opto-coupling; 96-stage digital filter; three-beam laser.
	DX-220	T	D	Yes	Yes	Yes	16R	D/P/E	No	Yes	5	Yes	No	I	8	No	C	D	Opto-coupling; three-beam laser.
	DX-120	T	D	Yes	No	Yes	16R	D/P/E	No	No	5	Yes	No			No	C	D	Three-beam laser.
PANASONIC	SL-NP10	T	D	Yes	Yes	Yes	18S	D/T/E	No	No		Yes	No			Yes	C	D	
	SL-NP20	T	D	Yes	Yes	Yes	18S	D/T/E	No	No		Yes	No			Yes	C	D	
	SL-P3620	B	B	Yes	Yes	No	20R	D/P	No	Yes	1	Yes	Yes	None		No	A	D	
PARASOUND	CDD-940	B	B	No	No	No	No	D/T	No	No	2	Yes				No	A	D	

COMPACT DISC PLAYERS

MANUFACTURER	Model	Frequency Response, Hz to kHz, ±dB	Dynamic Range, dB	S/N Ratio, −dB	Channel Separation, dB, at 1 kHz	Harmonic Distortion, %, at 1 kHz	Line Output Level, V; Fixed = F	Required (Amplifier Input) Load Impedance, Kilohms	Headphone Output = H, Headphone Output with Level Control = HL	Loading: Single Disc = A, Single-Disc Magazine = B, Multi-Disc = C	Dimensions, Inches	Weight, Lbs.	Price, $	Notes
PHILCO	CD2460BK	2-20 ±0.3	100	100	94	0.003	2F	10		A	16½ x 11¾ x 3½	8	279.00	
PIONEER	PD-9010XBK	2-20 ±0.3	96	98	95	0.001	2F		HL	A	18 x 3¾ x 12¼	12.8	539.95	
	PD-M6BK	4-20 +0.5, -1	94	98	92	0.005	1.5-2.5		HL	B/C†	16⅝ x 3⅞ x 12⅜	13	499.95	†Six-disc changer.
	PD-7030BK	4-20 ±0.5	95	98	94	0.004	1.5-2.5		HL	A	16⅝ x 3⅜ x 11½	9.2	469.95	
	PD-6030BK	4-20 ±0.5	95	97	92	0.004	1.5-2.5		H	A	16⅝ x 3⅛ x 11½	9.4	349.95	
	PD-5030BK	4-20 ±0.5	95	97	92	0.004	1.5-2.5		H	A	16⅝ x 3⅛ x 11½	9.4	299.95	
	CLD-909	4-20 ±0.5	95	98	92	0.005	0.26F		HL	A	16⅝ x 4¾ x 16	25⅜	900.00	CD/LaserVision player.
PROTON	830R	20-20 ±0.3	96	96	94	0.003	2F		HL	A	16½ x 3½ x 11⅛		349.00	
PS AUDIO	CD-1A	5-20 ±0.5	100	95	90	0.01	2F	10	H	A		18	799.00	
QUASAR	CD8936	4-20 +0.5, -1	90	90	90	0.004	F		HL	A	5 x 5 x 1¼	⅜	239.95	Portable.
	CD8956	4-20 ±0.3	96	100	100	0.0015	F		H	A	17 x 10½ x 3	10	249.95	
RCA	MCD141	20-20 ±0.5	90	90	90	0.004	2F			A	17⅛ x 3¼ x 10⅞	9.5	399.00	
	Dimensia	20-20 ±0.5	90	90	90	0.004	2F		HL	A	17⅛ x 3¼ x 10⅞	9.5	399.00	
	MCD145													
	CD180	20-20	90	90	90	0.005	2F			A	17⅛ x 2⅞ x 10⅜	7.3	199.00	
REALISTIC	CD2200 (42-5003)	5-20 +0.5, -1	90	90	90	0.005	2F			A	3⅜ x 12⅝ x 12⅛	7	200.00	
	CD1400 (42-5004)	5-20 +0.5, -1	90	90	90	0.005	2F			A	2⅞ x 14⅝ x 10⅜	6⅝	260.00	
	CD3000 (42-5005)	5-20 +0.5, -1.5			75	0.01	1.0F		HL	A	4⅜ x 2¾ x 4⅜	1⅛	280.00	Portable.
REVOX	B225	20-20 +0, -0.6	96	100	90	0.006	2F, 0-2	47	HL	A	18 x 13¼ x 4⅜	18¾	849.00	
ROTEL	RCD-850	5-20	95	98	90	0.004	2F	1	None	A	17⅛ x 3¾ x 11½	9.4	399.00	
SAE	D102	2-20 ±0.3	100	100	96	0.003	2.0F		HL	A	19 x 3½ x 13	20		Error indicator.
SANSUI	CD-E750	5-20	95	100	90	0.003	2F			A	15 x 3⅝ x 12¼	9.9	400.00	
	CD-V550R	5-20	95	100	90	0.003	2F		HL	A	17 x 3⅛ x 12⅜	8.8	370.00	
	CD-V350	5-20	95	100	90	0.003	2F		HL	A	17 x 3⅛ x 12⅜	8.8	300.00	
SANYO	CP700	5-20	96	90	92	0.005	1.8F		None	A	16½ x 3 x 10⅝	7½	199.95	
	CP710	5-20	96	90	92	0.005	1.8F		None	A	16½ x 3 x 10⅝	7½	249.95	
SCOTT	950DA	5-20 ±0.5	95	95	92	0.003	2.5F		None	A	17¼ x 11 x 3¾	10.8	300.00	
	960DA	5-20 ±0.5	95	95	92	0.003	2.5F		None	A	17¼ x 11 x 3¾	11.1	350.00	
SEARS	9754-97541	20-20 ±1	90	90	90	0.006	1.8F		None	A	14.6 x 2.8 x 14.4	7.3	180.00	
	9755	20-20 ±1	90	90	90	0.006	1.8F		H	A	14.6 x 2.8 x 14.4	7.3	230.00	
SHARP	DX-110	5-20 ±0.5	93			0.005	2.0F		H	A	13 x 11¾ x 3⅛	10.4	249.95	
	DX-610	5-20 ±0.5	93			0.005	2.0F		H	A	17 x 11¾ x 3⅛	11.7	259.95	
	DX-111	5-20 ±0.5	90		90	0.005	2.0F			A	13 x 11¾ x 3⅛	8.2		
	DX-611	5-20 ±0.5	90		90	0.005	2.0F			A	17 x 11¾ x 3⅛	9.3		
	DX-620	5-20 ±0.5	93		90	0.005	2.0F		H	A	17 x 11¾ x 3⅛	9.3	299.95	
	DX-R700	5-20 ±0.5	96		90	0.005	2.0F			A	17 x 11¾ x 3⅛	9.7		
SHERWOOD	CDP-300R	2-20 ±0.3	96	96	94	0.003	2F		None	A	17⅜ x 3¼ x 9¾	11	399.00	
	CDP-310R	2-20 ±0.3	96	96	94	0.003	2F		HL	A	17⅜ x 3¼ x 9¾	11	449.00	
SHURE	D5000	5-20 ±0.3	93	100	85	0.006	2.0F	10	None	A	16.9 x 3.9 x 10	11	399.00	
	D6000	5-20 ±0.25	102	102	85	0.005	2.0F, 0-2	10	HL	A	16.9 x 2.9 x 12.6	11	599.00	
	SV40	5-20 ±0.3	98	100	85	0.006	2.0F, 0-2	10	HL	A	16.9 x 2.9 x 10.6	9½	399.00	
SONOGRAPHE	SD1	5-15 ±0.25	94	94	90	0.05	2F		H	A	18 x 12 x 3¾	8½	695.00	
SONY	CDP-25	2-20 ±0.5	93	93	90	0.004	2F	10	H	A	17 x 3 x 11	8¾	270.00	
	CDP-35	2-20 ±0.5	95	95	90	0.004	2F	10		A	14 x 3¼ x 11¼	8¾	270.00	
	CDP-45	2-20 ±0.5	95	95	90	0.004	2F	10		A	17 x 3¼ x 11¼	9¼	330.00	
	CDP-50	2-20 ±0.5	95	95	90	0.004	2F	10		A	17 x 3¼ x 11¼	9¼	370.00	
	CDP-55	2-20 ±0.3	96	96	93	0.003	2F	10	HL	A	17 x 3¼ x 11¼	9¼	400.00	
	CDP-203	2-20 ±0.3	96	96	93	0.003	2F	10	HL	A	17 x 3¼ x 11¼	9¼	500.00	
	CDP-302II	2-20 ±0.3	96	96	95	0.003	2F	10	HL	A	17 x 3½ x 13¼	15	550.00	
	CDP-520ESII	2-20 ±0.3	96	96	95	0.003	2F	10	HL	A	17 x 3½ x 13¼	15	600.00	
	CDP-620ESII	2-20 ±0.3	96	96	95	0.0025	2F, 0.05-2	10	HL	A	17 x 3¼ x 13¼	19½	1000.00	

(Continued)

COMPACT DISC PLAYERS

MANUFACTURER	Model	Elapsed Time: From Disc Start=D, From Track Start=T, Both=B	Remaining Time: To Disc End=D, To Track End=T, Both=B	Track/Program Selection Number?	Index Display?	Program-Recall Display?	Programmable: Number of Selections; Random=R, Sequential=S	Repeat Functions: Entire Disc=D, Track=T, User-Marked Phrase=P, Entire Program=E	Random Access By Time Within Track?	Access by Index Code?	Maximum Access Time, Seconds	Audible Fast Search?	Auto Scan of Track Beginnings?	Remote Control Type: Infrared=I, Wired=W, Gives Confirmation Beep=B	No. of Remote Control Functions	Output Level Control?	Decoding System: 16 Bit=A, 14 Bit Oversampling=B, 16 Bit Oversampling=C	Filtration: Analog Only=A, Digital Plus Analog=D	Notes
		DISPLAY FUNCTIONS							ACCESS FUNCTIONS										
PHILCO	CD2460BK	T		Yes	Yes	Yes	20R	D/T/E	No	No	1	Yes	No			No	C	D	Subcode output jack.
PIONEER	PD-9010XBK	T	D	Yes	Yes	Yes	32R	D/T/E		Yes		Yes	Yes	I	13			D	
	PD-M6BK	T	D	Yes	No	Yes	32R	D/T/E	No	No		Yes	No	I		Yes		A	
	PD-7030BK	T	D	Yes	Yes	Yes	24R	D/T/E	No	Yes		Yes	No	I		Yes		D	
	PD-6030BK	T		Yes	No	Yes	24R	D/T/E	No	No		Yes	No	I		No		A	
	PD-5030BK	T		Yes	No	Yes	24R	D/T/E	No	No		Yes	No	I		No		A	
	CLD-909	B	B	Yes	Yes	Yes	10R	D/T/P/E	Yes	Yes		Yes	No	I			A	A	
PROTON	830R	B	B	Yes	Yes	Yes	20R	D/T/P		Yes				I	7		B		
PS AUDIO	CD-1A	B	T	Yes	Yes	Yes	20R	D/T/E	No	No	1	Yes	No	I	8	No	B	D	
QUASAR	CD8936	T	D	Yes	Yes	No			No	No						Yes	A	A	
	CD8956	B	B	Yes	Yes	No	20R	E	No	Yes	0.8					No	A	D	
RCA	MCD141	B		Yes	Yes	Yes	15R	D/T/P	No	Yes	2	Yes	Yes	Opt., I	14	No	A	A	
	Dimensia	B		Yes	Yes	Yes	15R	D/T/P	No	Yes	2	Yes	Yes	Opt., I	14	Yes	A	A	
	MCD145																		
	CD180	B		Yes	Yes		15R	D/T/P	No	Yes	2	Yes	No	None		No	A	A	
REALISTIC	CD2200 (42-5003)	B		Yes	Yes		15R	D/T	No	Yes		Yes	Yes				A	A	
	CD1400 (42-5004)	B		Yes	Yes		15R	D/T	No	Yes		Yes	Yes	I	8		A	A	
	CD3000 (42-5005)	B		Yes	Yes		16R	P	No	No	5	Yes	No				B	A	
REVOX	B225	B		Yes	Yes	Yes	19R	D/T/P/E	Yes	Yes	3	No	Yes	I or W	6	Yes	B	D	Digitally generated 1-kHz calibration tone, remote access to serial bus.
ROTEL	RCD-850	B	D	Yes	Yes		9S	D/E	Yes	Yes	2	No	No	None		No	A	D	Three-beam laser.
SAE	D102	B		Yes	Yes		20S	D/T/P/E	No	Yes	2	Yes	No	I	12	Yes	C	D	Remote has volume control.
SANSUI	CD-E750	B	D	Yes	Yes	Yes		D/T/P	No	Yes							A	D	
	CD-V550R	B	D	Yes	Yes	Yes	16R	D/T/P	No	Yes		Yes		I	14		A	D	
	CD-V350	B	D	Yes	Yes	Yes	16R	D/T/P	No	Yes		Yes					A	D	
SANYO	CP700	B	No	Yes	Yes	Yes	16R	D/T/P/E	Yes	Yes	1	Yes	No	None		No	A	D	
	CP710	B	No	Yes	Yes	Yes	16R	D/T/P/E	Yes	Yes	1	Yes	No	I	8	No	A	D	
SCOTT	950DA	B	D	Yes	Yes	Yes	15R	D/T/E	No	No	5	Yes	No			No	A	A	
	960DA	B	D	Yes	Yes	Yes	15R	D/T/E	No	No	5	Yes	No	I	8	No	A	A	
SEARS	9754-97541	T		Yes	Yes	Yes	15R	D/T/E	Yes	Yes	1	Yes	No			No			
	9755	T		Yes	Yes	Yes	15R	D/T/E	Yes	Yes	1	Yes	No	I	18	No			
SHARP	DX-110	T		Yes								Yes					A	D	
	DX-610	T		Yes								Yes					A	D	
	DX-111	T		Yes		Yes	9R	D/T/P/E				Yes					A	D	
	DX-611	T		Yes		Yes	9R	D/T/P/E				Yes					A	D	
	DX-620	T		Yes		Yes	9R	D/T/P/E				Yes		I	11		A	D	
	DX-R700	T		Yes		Yes	9R	D/T/P/E				Yes		I	11		A	D	
SHERWOOD	CDP-300R			Yes								Yes	No	W	5			D	
	CDP-310R			Yes								Yes	No	I	8			D	
SHURE	D5000	T		Yes	Yes	Yes	15R	D/T/P/E	No	No	3	Yes	No	I	14	No	C	D	
	D6000	T		Yes	Yes	Yes	15R	D/T/P/E	No	No	3	Yes	No	I	19	Yes	C	D	Dual D/A converters.
	SV40	T		Yes	No	Yes	15R	D/T/E	No	No	3	Yes	No	I	17	Yes	A	A	
SONOGRAPHE	SD1	T		Yes	Yes	Yes	20R	D/E	No	Yes		Yes	No			No	B	D	
SONY	CDP-25	T	D	Yes	Yes	Yes	16R, 99S	D/T/P/E	No	Yes	4	Yes	No			No	A	A	
	CDP-35	T	B	Yes	Yes	Yes	20R, 99S	D/T/P/E	No	Yes	2	Yes	No			No	A	A	
	CDP-45	T	B	Yes	Yes	Yes	20R, 99S	D/T/P/E	No	Yes	2	Yes	No	Opt., I	6	No	A	A	
	CDP-50	T	B	Yes	Yes	Yes	20R, 99S	D/T/P/E	No	Yes	2	Yes	No	I	11	No	A	A	
	CDP-55	T	B	Yes	Yes	Yes	20R, 99S	D/T/P/E	No	Yes	2	Yes	No	I	11	No	C	D	

(Continued)

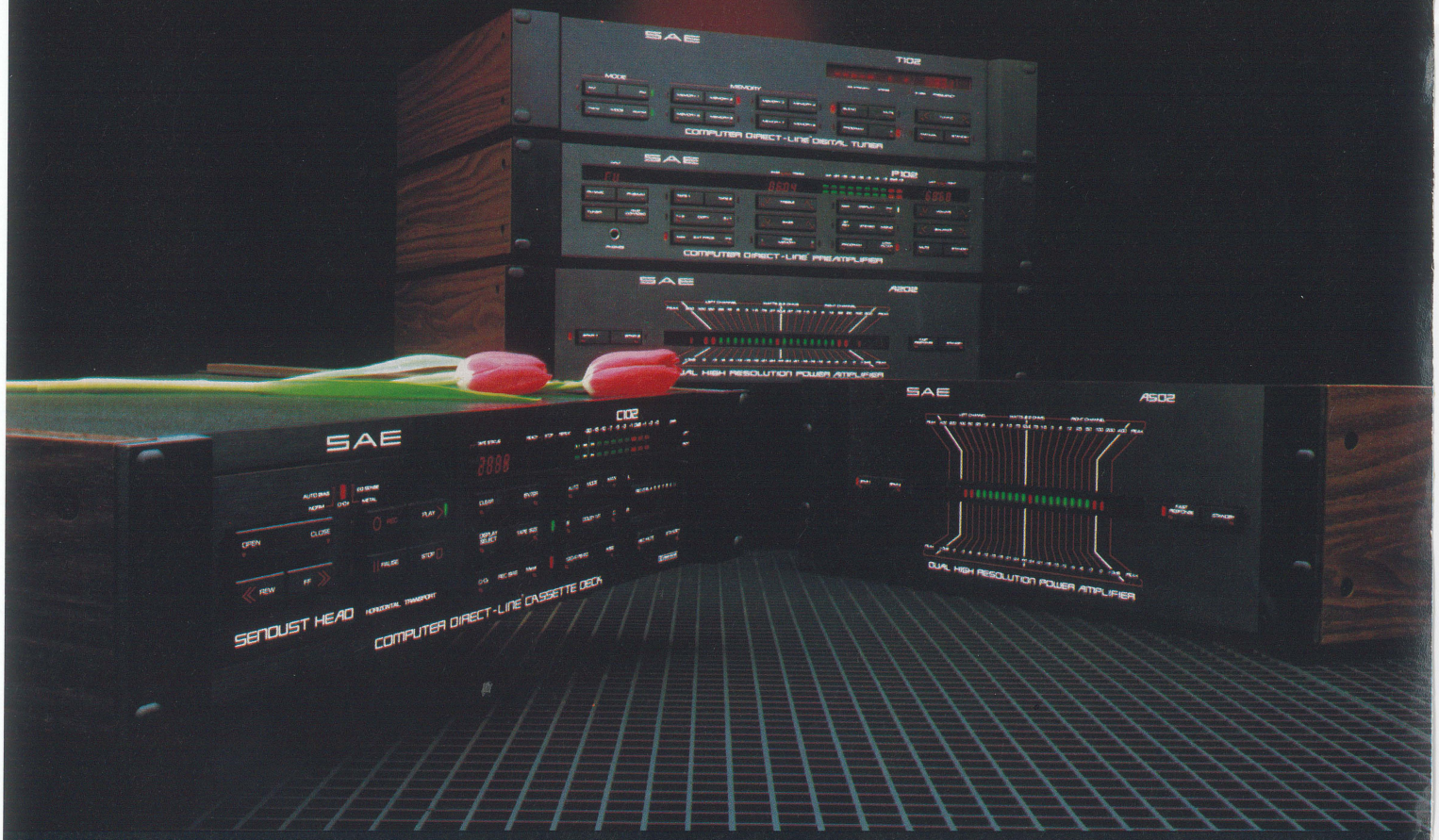
COMPACT DISC PLAYERS

MANUFACTURER	Model	Frequency Response, Hz to kHz, ±dB	Dynamic Range, dB	S/N Ratio, –dB	Channel Separation, dB, at 1 kHz	Harmonic Distortion, %, at 1 kHz	Line Output Level, V; Fixed = F	Required (Amplifier Input) Load Impedance, Kilohms	Headphone Output = H, Headphone Output with Level Control = HL	Loading: Single Disc = A, Single-Disc Magazine = B, Multi-Disc = C	Dimensions, Inches	Weight, Lbs.	Price, $	Notes
SONY (Continued)	CDP-650ESDII	2-20 ±0.3	96	96	95	0.0025	2F, 0.05-2	10	HL	A	17 x 4 x 14½	20	1300.00	
	CDP-7F	2-20 ±0.5	90	90	90	0.004	2F	10	HL	A	8½ x 3¼ x 12	9	300.00	
	D-170	20-20 ±0.5	90	85	85	0.008	2F	10	HL	A	7½ x 3¼ x 12	9	265.00	
	D-5SPL	20-20 ±0.5	90	85	85	0.008	2F	10	HL	A	5 x 1½ x 5¼	1¼	279.95	Portable; includes battery, case, and headphones.
	D-7S	20-20 ±0.5	90	85	85	0.008	2F	10	HL	A	5 x 1 x 5	2¼	299.95	Portable; includes rechargeable battery, case, and strap.
	D-55	20-20 ±0.5	90	85	85	0.008	2F	10	HL	A	5 x 1 x 5	2½	329.95	Portable; includes FM tuner, battery, case, and headphones.
	D-77	20-20 ±0.5	90	85	85	0.008	2F	10	HL	A	5 x 1 x 5	2½	359.95	Portable; includes AM/FM tuner, rechargeable battery, case, headphones, and car adaptor.
	CDP-C10	2-20 ±0.3	96	96	95	0.003	2F	10	HL	C†	17 x 4¼ x 13	16	800.00	†Ten-disc changer.
	DiscJockey CDK-006	2-20 ±0.3	96	96	95	0.003	2F	10		C†	19 x 20 x 20	40	3000.00	†Sixty-disc changer.
SYLVANIA	CD1150BK	2-20 ±0.3	100	100	94	0.003	2F	10		A	12½ x 11¾ x 3½	7	269.00	
	FDE203BK	2-20 ±0.3	100	100	94	0.003	2F	10	H	A	16½ x 11¾ x 3½	8	279.00	
	CD1560BK	2-20 ±0.3	100	100	94	0.003	2F	10		A	16½ x 11¾ x 3½	8	329.00	
	CD1460BK	2-20 ±0.3	100	100	94	0.003	2F	10		A	16½ x 11¾ x 3½	8	279.00	
TANDBERG	TCP 3015A	2-20 ±0.3	96	100	94	0.005	2F		HL	A	17⅛ x 13¾ x 3½	12½	1295.00	
TEAC	ZD-5000	5-20 ±0.3	96	96	95	0.0025	0.055-2	50	HL	A	17½ x 3⅞ x 13½	20¼	1100.00	
	ZD-3000	5-20 ±0.3	96	96	95	0.0025	0.055-2	50	HL	A	17½ x 3½ x 13½	17¾	950.00	
	ZD-700	5-20 ±0.3	96	96	95	0.0025	2F	50	HL	A	17⅛ x 2¾ x 11⅝	16	699.00	
	PD-400	8-20	95	95	92	0.005	2F	50		A	17⅛ x 3 x 10¾	7¾	449.00	
	PD-200	5-20 ±1	92	92	85	0.005	2F	50		A	17⅛ x 3⅛ x 11¾	8¾	399.00	
	PD-100	8-20	92	92	85	0.005	2F	50		A	17⅛ x 3 x 10¾	7¾	349.99	
	AD-7	5-20	96	96	92	0.0035	0.055-2	50	HL	A			999.00	Cassette deck/CD player; see also "Cassette Decks."
TECHNICS	SL-P110	4-20 ±0.5	92	96	96	0.004	2.0F	47	None	A	17 x 3 x 9½	8	320.00	
	SL-P310	4-20 ±0.5	94	96	96	0.002	2.0F	47	H	A	17 x 3 x 9½	8	375.00	
	SL-P500	4-20 ±0.2	96	102	110	0.001	2.0F, 0.2-2.0	47	HL	A	17 x 3½ x 10¾	10.1	500.00	
	SL-PJ11	4-20 ±0.5	96	96	100	0.002	2.0F	47	None	A	12⅜ x 3 x 10½	7.9	300.00	
	SL-XP5	4-20 +0.5, -1	90	90	90	0.004	1.8F	47	HL	A	5 x ⅞ x 5		335.00	Portable.
	SL-XP8	4-20 +0.5, -1	90	90	90	0.004	1.8F	47	HL	A	5 x 1 x 5		425.00	Portable tuner/CD player; eight AM and eight FM presets.
	SL-P1200	4-20 ±1	96	106	106	0.001	2.0F	47	HL	A	17 x 6⅝ x 15	27.1	1000.00	
TOSHIBA	XR-P9	5-20 +0.5,-1.5	84	84	75	0.01	1.0F	10	HL	A	5 x 1⅝ x 7	1.1	299.95	Portable.
	XR-J9	5-20 +0.5,-1.5	84	84	75	0.01	1.0F	10	HL	A	9⅞ x 1⅞ x 5⅛	2.9	199.95	
	XR-30	5-20 ±0.5	96	96	90	0.003	2.0F	10	HL	A	16½ x 3⅛ x 12⅛	9	249.95	
	XR-35	5-20 ±0.5	96	96	90	0.003	2.0F	10	HL	A	16½ x 3⅛ x 12⅛	9	299.95	
	XR-V22	5-20 ±0.5	96	96	90	0.003	2.0F	10	HL	C†	13⅜ x 4¼ x 14⅛	13.4	499.95	†Two slide-out drawers. Continuous play.
VECTOR RESEARCH	VCD-770	10-20 ±0.5	96	95	85	0.005			HL	A	17 x 3½ x 8¼	11	399.95	
	VCD-808R	5-20 ±0.5	94	100	90	0.005			HL	A	17 x 3½ x 12½	11	399.95	
	VCD-900	5-20 ±0.5	94	100	90	0.005			HL	A	17 x 3½ x 12½	11	499.95	
YAMAHA	CD-2000M	2-20 ±0.3	97	102	96	0.002	2.0F, 0-5.0		HL	A	17⅛ x 4 x 11½	12⅛	899.00	
	CD-2000	2-20 ±0.3	97	102	95	0.002	2.0F, 0-5.0		HL	A	17⅛ x 3¾ x 11½	11½	799.00	
	CD-1000	2-20 ±0.5	97	102	95	0.002	2.0F		H	A	17⅛ x 3¾ x 11½	11¼	699.00	
	CD-700	4-20 +0.5,-1	96	100	92	0.003	2.0F		H	A	17⅛ x 3¾ x 11½	10½	599.00	
	CD-500	4-20 +0.5,-1	96	100	92	0.003	2.0F		HL	A	17⅛ x 3¾ x 11½	10½	399.00	
	CD-400	5-20 +0.5,-1	95	98	90	0.004	2.0F		HL	A	17⅛ x 3¾ x 11¼	9¼	319.00	
	CD-300	5-20 +0.5,-1	95	98	90	0.004	2.0F		HL	A	13⅜ x 3⅝ x 11¼	7¾	259.00	

COMPACT DISC PLAYERS

MANUFACTURER	Model	Elapsed Time: From Disc Start=D, From Track Start=T, Both=B	Remaining Time: To Disc End=D, To Track End=T, Both=B	Track/Program Selection Number?	Index Display?	Program-Recall Display?	Programmable: Number of Selections; Random=R, Sequential=S	Repeat Functions: Entire Disc=D, Track=T, User-Marked Phrase=P, Entire Program=E	Random Access By Time Within Track?	Access by Index Code?	Maximum Access Time, Seconds	Audible Fast Search?	Auto Scan of Track Beginnings?	Remote Control Type: Infrared=I, Wired=W, Gives Confirmation Beep=B	No. of Remote Control Functions	Output Level Control?	Decoding System: 16 Bit=A, 14 Bit Oversampling=B, 16 Bit Oversampling=C	Filtration: Analog Only=A, Digital Plus Analog=D	Notes
		DISPLAY FUNCTIONS						ACCESS FUNCTIONS											
SONY (Continued)	CDP-203	T	B	Yes	Yes	Yes	20R, 99S	D/T/P/E	No	Yes	2	Yes	No	I	12	No	C	D	
	CDP-302II	T	B	Yes	Yes	Yes	16R, 99S	D/T/P/E	No	Yes	1	Yes	No	I/B	11	No	C	D	
	CDP-520ESII	T	B	Yes	Yes	Yes	16R, 99S	D/T/P/E	No	Yes	1	Yes	No	I/B	11	No	C	D	
	CDP-620ESII	B	B	Yes	Yes	Yes	20R, 99S	D/T/P/E	No	Yes	1	Yes	No	I/B	13	Yes	C	D	Dual D/A converters.
	CDP-650ESDII	B	B	Yes	Yes	Yes	20R, 99S	D/T/P/E	No	Yes	1	Yes	No	I/B	13	Yes	C	D	As above; digital output stage.
	CDP-7F	T	B	Yes	No	Yes	16R, 99S	D/T/P/E	No	No	4	Yes	No	Opt., I	6	No	A	A	
	D-170	B	B	Yes	No	Yes	16R, 99S	D/T/P/E	No	No	4	Yes	No			No	A	A	
	D-5SPL	B	B	Yes	No	No	99S		No	No	4	Yes	No			No	A	A	
	D-7S	B	B	Yes	No	Yes	16R, 99S	D/T/P/E	No	No	4	Yes	No			No	A	A	
	D-55	B	B	Yes	No	Yes	16R, 99S	D/T/P/E	No	No	4	Yes	No			No	A	A	
	D-77	B	B	Yes	No	Yes	16R, 99S	D/T/P/E	No	No	4	Yes	No			No	A	A	
	CDP-C10 DiscJockey	B	B	Yes	Yes	Yes	20R, 99S	D/T/P/E	No	No	10	Yes	No	I/B	13	Yes	C	D	
	CDK-006	T	T	Yes	Yes	Yes	60R, 99S	D	No	No	10	No	No	W/B	6	Yes	C	D	
SYLVANIA	CD1150BK	T		Yes	No	Yes	20R		No	No	3	Yes	No			No	B	D	
	FDE203BK	T		Yes	No	Yes	20R	D/T/E	No	No	3	Yes	No			No	B	D	
	CD1560BK	T		Yes	Yes	Yes	20R	D/T/E	No	No	1	Yes	No	I	10	No	C	D	Subcode output jack.
	CD1460BK	T		Yes	Yes	Yes	20R	D/T/E	No	No	1	Yes	No			No	C	D	As above.
TANDBERG	TCP 3015A	B	B	Yes	Yes	Yes	20R	D/T/E	Yes	Yes		Yes	No	Opt., I	10		B	D	
TEAC	ZD-5000	B	B	Yes	Yes	Yes	20R	D/T/P/E	No	Yes	2	Yes	Yes	I	17	Yes	C	D	
	ZD-3000	B	B	Yes	Yes	Yes	20R	D/T/P/E	No	Yes	2	Yes	Yes	I	17	Yes	C	D	
	ZD-700	B	B	Yes	Yes	Yes	16R	D/T/P/E	No	Yes	2	Yes	No	I	13	No	C	D	
	PD-400	T	T	Yes	Yes	No	16R	D/T/P	No	Yes	2	Yes	No	I	9	No	C	D	
	PD-200	T		Yes	No	No	16R	D/T/P	No	No	2	Yes	No			No	A	A	
	PD-100	T		Yes	Yes	No	16R	D/T/P	No	Yes	2	Yes	No			No	C	D	
	AD-7	T	B	Yes	Yes	No	15R	D/T/P	No	Yes	2	Yes	No	I	14	Yes	A	A	
TECHNICS	SL-P110	B†	B††	Yes	No	Yes	20R	D/T/E	No	No	1	Yes	No	None		No	C	D	†Plus elapsed program time. ††Plus remaining program time.
	SL-P310	B†	B††	Yes	No	Yes	20R	D/T/E	No	No	1	Yes	No	I	10	No	C	D	
	SL-P500	B†	B††	Yes	Yes	Yes	20R	D/T/P/E	No	Yes	0.8	Yes	Yes	I	16	Yes	C	D	
	SL-PJ11	B†	B††	Yes	Yes	Yes	15R	D/T/E	No	Yes	0.8	Yes	No	None		No	A	A	
	SL-XP5	D	T	Yes	No	Yes	18R	D/T/E	No	No	1	Yes	No	None		No	C	D	
	SL-XP8	D	T	Yes	No	Yes	18R	D/T/E	No	No	1	Yes	No	None		No	C	D	
	SL-P1200	B	B	Yes	Yes	Yes	20R	D/T/E	Yes	Yes	0.6	Yes	No	I	20	No	C	D	Can cue up any part of any track.
TOSHIBA	XR-P9	B	D	Yes	Yes	Yes	16R	D/T/E	Yes	No	2	Yes	No	I	14	No	B†	A	†No oversampling.
	XR-J9	B	D	Yes	Yes	Yes	16R	D/T/E	Yes	No	2	Yes	No	None		No	B†	A	†As above.
	XR-30	B	D	Yes	Yes	Yes	16R	D/T/E	Yes	No	2	Yes	No	None		No	A	A	
	XR-35	B	D	Yes	Yes	Yes	16R	D/T/E	Yes	No	2	Yes	No	I	14	No	A	A	
	XR-V22	B		Yes	Yes		15S†	D/T/E	Yes	No	2	No	No	None		No	A	A	†For each of two discs.
VECTOR RESEARCH	VCD-770	B	D	Yes	Yes	Yes	15R	D/T/P/E	No	No	2	No	No	I	10	No	C	D	
	VCD-808R	B	D	Yes	Yes	Yes	15R	D/T/P/E	No	No	2	Yes	No	I	10	No	C	D	
	VCD-900	B	D	Yes	Yes	Yes	15	D/T/P/E	No	No	2	Yes	No	I	14	Yes	C	D	
YAMAHA	CD-2000M	T	D	Yes	Yes	Yes	12R	D/P/E	No	Yes		Yes	No	I	27	Yes	C	D	
	CD-2000	T	D	Yes	Yes	Yes	12R	D/P/E	No	Yes		Yes	No	I	27	Yes	C	D	
	CD-1000	T	D	Yes	Yes	Yes	12R	D/P/E	No	Yes		Yes	No	I	25	No	C	D	
	CD-700	T		Yes	Yes	Yes	12R	D/P/E	No	Yes		Yes	No	I	22	No	C	D	
	CD-500	T		Yes	Yes	Yes	9R	D/P/E	No	Yes		Yes	No	I	12	No	C	D	
	CD-400	T		Yes	Yes	Yes	9R	D/E	No	Yes		Yes	No			No	C	D	
	CD-300	T		Yes	Yes	Yes	9R	D/E	No	Yes		Yes	No			No	C	D	

SAE



Scientific Audio Electronics has continued to excel in the development of superior audio components since 1967. SAE's entry into the audio industry broke new ground in solid state amplifier technology with the first Complementary amplifier circuits evolving from our labs. However, award-winning designs were not to be limited to power amplifiers at SAE. Seven times an SAE component has been selected for the prestigious Design and Engineering Award from the Consumer Electronics Committee. Innovative industry firsts from SAE include the introduction of the graphic and parametric equalizers to consumer audio and the first digital tuner. In keeping with state-of-the-art technology, SAE developed the first fully computerized controlled components and the world's first Impulse Noise Reduction System.

Today, the '02' Series broadens the fully computerized component concept. At the heart of '02' technology is the P102 preamplifier. Controlled by a Rockwell microprocessor, its Direct-Line Audio Circuitry "decouples" the front panel controls from all audio information. New preamplifier features include programmable Digital Tone Memories and Sequential Audio Muting, a volume fade process designed to protect your ears and loudspeakers from damage—another SAE innovation that *sounds* good.

The C102 cassette deck is a full-logic machine, neatly concealing its horizontal transport in an electronic drawer. Real-time indicators, Auto Replay, Auto Bias Sensing and a Music Search System add to an ingenious design.

As with all Direct-Line components, the T102 digital tuner uses alpha-numeric LED displays and precise reception is assured with a digitally synthesized, quartz-lock system. There are 16 programmable station memories and auto and manual tuning modes in the T102.

And that special, final touch comes in our A202 and A502 power amplifiers. With them, we present systems of 100 and 200 watts per channel and an amazing 600 watts per channel with a dual amplifier system of two A502 auto-bridging amplifiers. The A202 and A502 are high current, discrete, complementary amplifiers with LED power displays, dual speaker system switching and relay and thermal protection circuitry.

The '02' Series reflects our commitment to maintaining our proven designs complemented by state-of-the-art technology. That's the timeless quality of SAE.

Scientific Progress

SAE . . . *on the leading edge.*

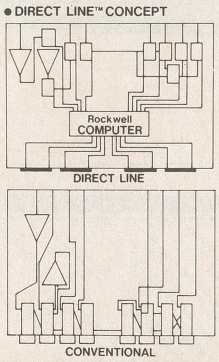
A202/A502—SAE amplification pioneered the high current power supply theory, noting long ago, that it is not watts that drive a loudspeaker, but rather, the current provided by the amplifier. Use of low-noise, highly efficient transformers and increased number of output devices eases the job of passing the high amount of current inherent to our amplifiers.

The A202 and A502 are Complementary amplifiers, utilizing mirror-imaged circuits to individually process the positive and negative sides of the musical sine wave. Here, SAE's system of Natural Damping results in precise control of loudspeaker response at all levels and frequency extremes. The ring-core power transformer in both models provides extended headroom and low impedance performance stability.

The A502 is a very special amplifier. A rear panel switch activates the Automatic Bridging Circuit for a bridged mono output of 600 watts. Simply by adding a second A502 to your system brings concert hall dynamics to your neighborhood with 1200 total watts of power.

P102—The P102 preamplifier features Direct-Line Audio, reducing the distance travelled by the audio signal by over fifty percent. A Rockwell microprocessor loaded with SAE developed software isolates all audio information from the front panel where switching noise can be most prevalent.

The P102 features a Compact Disc input, Two-Way Tape Copying, External Processor Loop, Digital Tone Memories for three programmable bass and treble settings, Moving Coil Phono input, Line and Tape Stage LED Displays, Sequential Audio Muting and Dual Main Outputs. The SAE Complementary Phono Power Amp optimizes phono reproduction by accurately driving the RIAA equalization curve to minimize transient intermodulation distortion (TIM).



T102—The T102 digital tuner is a quartz-lock, digitally synthesized component. Full-logic, tactile feedback switches control all operations including 16 station memories. The Blend feature helps to remove high frequency distortion and we use linear stage ceramic IF filters for bandwidth alignment to compensate for adjacent station interference.

C102—At SAE, careful attention is given to every aspect of design and the elegance of the C102 cassette deck is purely intentional. All mechanical portions of the transport have been neatly compacted into a sliding, electronic drawer. A light touch of the appropriate front panel switch places the cassette at hand and retracts the mechanism silently into the confines of the machine. We even saw to it to have the C102 fully functional with the drawer open, closed or moving in either direction! On-board microprocessors control Dolby B-C Noise Reduction, Real Time Indicators, Music Search System (MSS), Auto Bias Sensing, Auto Replay and the full-logic, two head transport. Linear slide controls regulate recording levels for increased gain without sacrificing critical signal-to-noise ratio.

I102/R102—The SAE excellence in amplifier design goes beyond separate power amplifiers. The 60 watt per channel I102 integrated amp and the 50 watt per channel R102 receiver are Computer Direct-Line components with High Current, Natural Damping amplifier sections. Loudspeaker performance is ensured for linear response as the motion of the loudspeaker drivers is controlled more accurately by the complementary nature of these hybrid configuration amplifiers.

The Computer Direct-Line signal processing design of the I102 and R102 provides maximum switching capability with minimal front panel clutter and isolates the audio signal from potential sonic interference from the function switches. Both components feature the SAE Complementary Phono Power Amp stage while the I102 adds a Moving Coil Phono Input. Two-Way Tape Copying is accessible with just a light touch of the appropriate front panel control. Bass and treble is programmable in three different combinations in the Digital Tone Memory. High level inputs include a Compact Disc Input and two Tape Monitors and the I102 also provides the added flexibility of an External Processor Loop for efficient installation of an equalizer or expander into your system.

The alternatives in SAE components to select your particular listening experience are exciting. Consider that the options extend from our 50 watt R102 receiver through the entire '02' Series to our legendary '01' separates system with up to 375 watts per channel! No ordinary audio company can offer the quality and freedom of choice of SAE.

Look for our new products soon, including the D102 Remote Control Compact Disc Player. It's going to be hot!

Audition the complete selection of SAE components at these and other fine audio dealers.

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SAE

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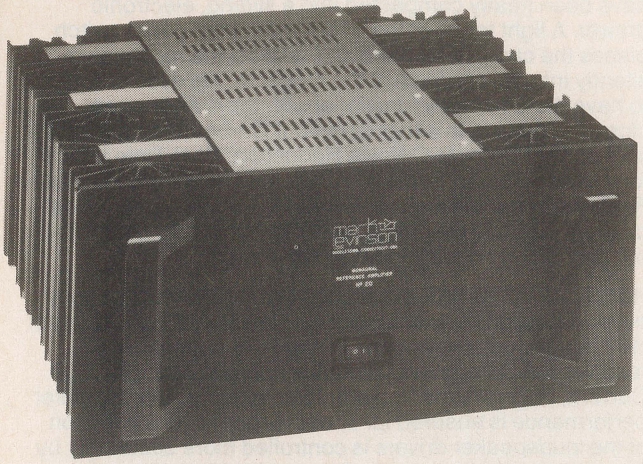
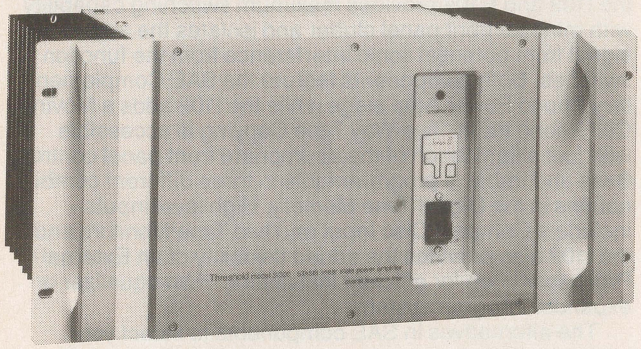
AMPLIFIERS

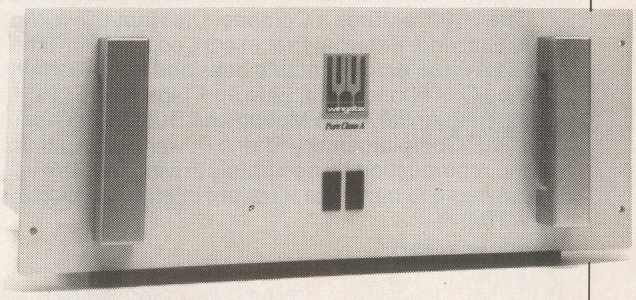
MARK LEVINSON NO-20



AUDIO RESEARCH D-250

THRESHOLD S/300





WINGATE 2000A

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Unit Type: Integrated = I, Basic = B, Tube = T, Mono = M	Cont. Average Watts/Channel into 8 Ohms	Cont. Average Watts/Channel into 4 Ohms	Power Bandwidth, Hz to kHz	Rated THD, %	Rated IHF IM, %	Class of Output Operation	MM Phono S/N, – dB, "A" Wtd. re: 5 mV	MM Phono Sensitivity, mV	Maximum MM Phono Input, mV	Moving Coil Input?	Rated Slew Rate, V/μS	High Level Sensitivity, mV	Meters = M, Peak/Clip Indicators = I	Dynamic Headroom, dB	Does Unit Invert Phase?	Weight, Lbs.	Price, $	Notes
ACCUPHASE	P300L	B	150	280	20-20	0.02	0.01	AB							M		No		2750.00	
	P500	B	250	420	20-20	0.02	0.01	AB							M		No	74	4500.00	
	Pro 5	B	250	420	20-20	0.02	0.01	AB							M		No	60	3000.00	
	P600	B	300	500	20-20	0.02	0.01	AB							M		No	85	5200.00	
	M100	B/M	500	800	20-20	0.02	0.01	AB							M		No	80	3800.00	
	E-205	I	80	110	20-20	0.02	0.01	AB	78	0.32	300	Yes					No	31	1250.00	
	E-302	I	120	180	20-20	0.02	0.01	AB	80	0.22	300	Yes					No	36	2000.00	
	E-303X	I	150	200	20-20	0.01	0.01	AB	80	0.22	300	Yes					No	45	2500.00	
ACOUSTAT	TNT-120	B	120	180	2-450	0.01	0.01	AB					160			1.2	No	28	799.00	
	TNT-200	B	200	325	2-400	0.01	0.01	AB					160			1.2	No	40	1249.00	
ACOUSTIC ELECTRONICS	Air 2.2	B	110	205	20-20	0.008	0.008	A/AB								4	Yes	45	1850.00	
	Air 3.3	B/M	330	400	20-20	0.008	0.008	A/AB								6	No	45	1995.00	
ADCOM	GFA-555	B	200	325		0.09		AB							†		No	34	679.95	†Distortion indicators.
	GFA-545	B	100	150		0.09		AB							†		No	27	449.95	
	GFA-535	B	60	100		0.09		AB							†		No	22	299.95	
ADS	A2	I	80	100	20-20	0.05	0.05	AB	80	0.26	120	Yes	30	35	M, I	2		20	550.00	Rail-switching amp.
AKAI	AM-A90	I	130		20-20	0.05		B	86	2.0	250	Yes		150			No	27½	645.00	No negative feedback.
	AM-A70	I	100		20-20	0.05		B	86	2.0	250	Yes		150			No	25½	475.00	As above.
	AM-A402	I	100		20-20	0.09		B	72	2.5	120	No		150	M, I		No	16	300.00	
	AM-A302	I	80		20-20	0.09		B	72	2.5	120	No		150	M, I		No	15	230.00	
	AM-A202	I	50		40-20	0.3		B	72	2.5	120	No		150			No	12¾	180.00	

INTRODUCING THE

M300

HYBRID MONAURAL POWER AMPLIFIER

Recently, Audio Research Corporation developed and patented (pending) new circuitry allowing hybrid utilization of Field Effect Transistors (FETs) with vacuum tubes in ways which can bring out the best in both devices. This circuitry is used in the relatively new, but already widely-acclaimed SP11 Preamplifier. Drawing from this technology, Audio Research has designed a new hybrid power amplifier, designated the M300 — a monaural unit rated at 300 watts.

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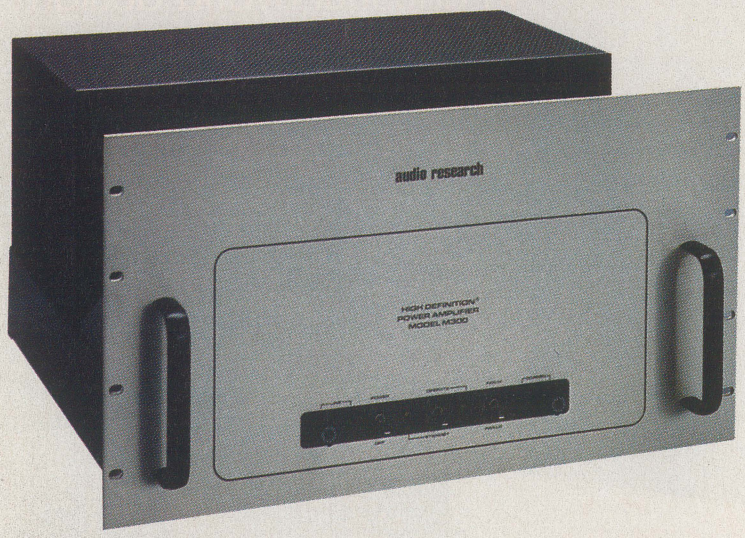
M300



HYBRID MONAURAL POWER AMPLIFIER

Most hybrid power amplifier designs use small signal-input vacuum tubes, then rely on FETs for the output stage. Audio Research has chosen instead to eliminate these low-level input tubes — tubes which can be prone to problems with hum, noise, microphonics, drift and, of course, require periodic replacement. The new FET "front end" is combined with Audio Research's long-famous, patented cross-coupled circuit to provide a design offering exemplary stability, reliability (low maintenance), and superior performance.

These design advances have been coupled with yet another Audio Research patent: an output stage utilizing vacuum tubes, and partially cathode-coupled (as all previous Audio Research vacuum tube amplifiers have been), but with the screen (or accelerating) grids operating with a signal voltage precisely in phase with the cathode voltage. True "pentode" operation and efficiency is thereby achieved; however, all the advantages of partial cathode coupling are maintained. Advantages include:

Efficiency up to 60% and above. (Class "A" designs achieve 25% to 50%, typically 30% to 35%.)

Inherently better cross-coupling.

Output transformer with lower "turns" and "impedance" ratios, resulting in greater bandwidth.

Partial cancellation of saturation effects of the "DC" in the output transformer's core.

Switching transients essentially eliminated, rendering the question of class of operation ("A," "AB," etc.) irrelevant. The virtues of Class "A" operation without the usual drawbacks.

Bias adjustment is essentially non-critical.

Output tubes need not be matched, although slightly better performance will result if they are.

Lower internal impedance improves handling of complex speaker loads.

To audition the M300 Monaural Power Amplifiers, visit your authorized Audio Research dealer. Black front panels available at additional cost. Call or write for literature on the complete line of Audio Research products.

Operational Features

Front-panel replaceable line and screen voltage fuses, with LED indicators.

Two integral, low-noise fans for cooler operation, longer tube life. Front-panel switch allows "Hi" and "Lo" speeds.

"Standby" switch for lower power consumption and less heat during warm-up periods or telephone interruptions.

Automatic muting circuit provides silent shutdown upon power shut-off or interruption. No "thump" from speakers.

Gold-plated input connectors connect "ground" before "hot".

1, 2, 4, and 8-ohm output taps.

Front and rear handles for easier handling.

M300 Preliminary Specifications

(Power line stabilized at 120V.)

POWER OUTPUT: 300 watts minimum continuous at 8 ohms from 16Hz to 25kHz with less than 0.5% total harmonic distortion (typically below .005% at 1 watt).

Approximate actual power available at "clipping": 330W watts (1kHz). (Note that actual power output is dependent upon both line voltage and "condition," ie: if power line has high distortion, maximum power will be affected adversely, although from a listening standpoint this is not very critical.)

POWER BANDWIDTH: (–3dB Points) 10Hz to 60kHz.

INPUT SENSITIVITY: 1.5V RMS for rated output.

INPUT IMPEDANCE: 60K ohms, nominal.

OUTPUT REGULATION: Approximately 0.3dB, 8 ohm load to open circuit (Damping factor approximately 30)

NEGATIVE FEEDBACK: 20dB.

SLEW RATE: 25 volts/microsecond.

RISE TIME: 3 microseconds.

HUM & NOISE: Less than 2mV RMS 90dB below rated output (broad-bandwidth unweighted, inputs shorted).

POWER SUPPLY ENERGY STORAGE: Approximately 350 joules.

POWER REQUIREMENTS: 105-125VAC 60Hz (210-250VAC 50Hz) 900 watts at rated output. 450 watts at "idle" — 130 watts at "standby".

DIMENSIONS: 19″ (48 cm) W (standard rack panel) x 10.5 ″ (27 cm) H x 16″ (41 cm) D (front panel back). Handles extend 1⅝″ (4.1 cm) forward of the front panel. Output connectors extend 1″ behind rear panel.

WEIGHT: 110 lbs. (50 kg) Net; 126 lbs. (57 kg) Shipping.

TUBES REQUIRED: 8 – 6550 Power Output (Matched pairs will yield marginally better performance.).

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AMPLIFIERS

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APT		B			20-20	0.01	0.01	AB					60	900		3		26	780.00	Speaker impedance selector; bridges to 500 watts.
AR	P-10	B	110	150	20-20	0.03	0.03	AB					30			6	No		780.00	
	A-06	I	60	90	20-20	0.03	0.03	AB	80	2.5	150	Yes	40	150		2	No		430.00	
	A-04	I	40	60	20-20	0.03	0.03	AB	80	2.5	150	Yes	40	150		2	No		340.00	
ATHENA	M-1	B	100	100	20-25	0.1	0.1	A/AB					25	750			No	75	1700.00	
	M-2	B/M	200	200	20-25	0.1	0.1	A/AB					25	750			No	75	2200.00	
AUDIBLE ILLUSIONS	S-120	B	120	240	5-200	0.01	0.01	AB1					100	1.2V			No	45	895.00	
	M-80	B/T/M	80	80	10-100	0.2		A					50	1.5V			No	90	2250.00	
AUDIO DESIGN ASSOCIATES	PT-50	B	25	40	20-20	0.02	0.04	AB					2.5	687	M	1.2	Yes	8	895.00	
	PT-200	B	60	110	20-20	0.06	0.15	AB					12	687	M	1.5	No	28	1595.00	300 watts into 1 ohm.
	PF-200	B	60	110	20-20	0.06	0.07	AB					10	687	M	1.5	No	25	995.00	150 watts into 2 ohms.
	PBA-150	B	100	125	†	0.06	0.07	AB					10	687	M		No	20	995.00	†20 to 200 Hz; subwoofer amp/ crossover.
	PF-300	B	100	175	20-20	0.06	0.07	AB					15	687	M	1.2	Yes	35	1995.00	
	System 56 DCA 40(RI)	I	20	40	20-20	0.03	0.05	AB						687		1.2	No		13,400.	Remote music system for up to 60 rooms; price shown here is for five rooms.
AUDIOLAB	8000 A	I	50	100	2-65	0.05	0.05	AB	76	2.0	175	Yes		100	No		No	17	695.00	Split operation possible.
	8000 P	B	100	200	3-75	0.05	0.05	AB						1V	No		No	20	895.00	Dual mono.
AUDIO RESEARCH	D-70MKII	B/T	60	60	15-30	1	0.1	AB1					10				No	49	1995.00	
	D-79CMKII	B/T	75	75	15-40	1	0.5	AB1					10		M		No	105	6000.00	
	D-115MKII	B/T	100	100	12-60	1	0.1	AB1					15				No	68	2995.00	
	D-120	B	120	200	.6-150	0.25	0.05	AB1					40				No	43	1995.00	
	D-250MKIIS	B/T	240	240	12-60	1	0.1	AB1					25				No	138	5995.00	
	M-100	B/T/M	100	100	12-60	1	0.2	AB1					15				No	53	2495.00	Front panel bias adjustment.
	M-300	B/M	300	300		0.5		AB1									No	100	4900.00	Hybrid design.
AUDIRE	Parlando	B	100	200	2-50	0.02	0.003	A					50	1.2V			No	90	2850.00	Dual mono.
	Otez	B	250	500	2-50	0.015	0.015	AB					50	1.7V			No	90	2750.00	Semi-dual mono.
	Forte II	B	25	50	2-50	0.025	0.008	A					50	1V			No	45	1050.00	Dual mono; 190 watts into 1 ohm.
	Forte	B	125	250	2-50	0.025	0.008	AB					50	1.4V			No	45	990.00	Dual mono.
	Crescendo	B	75	130	2-50	0.05	0.01	AB					45	1.3V			No	25	435.00	
A.V.A.	MOS-FET Control Amplifier	I	25	45	20-20	1	1	AB	75	0.5	150	No	90	50		0.5	No	19	525.00	No HF feedback.
	MOS-FET 150C	B	70	120	20-20	1	1	AB					90			0.5	No	19	580.00	As above.
	MOS-FET 250C	B	140	250	20-20	1	1	AB					90			0.5	No	30	745.00	As above.
	Transcendence 250	B	140	270	20-20	0.07	0.07	AB					90			0.5	No	31	1250.00	
	Transcendence 500	B	300	550	20-20	0.07	0.07	AB					90			0.5	No	50	1600.00	
BEARD AUDIO	P35	B/T	35	35	20-20	1		A						900		†	No		1900.00	†16.5 dB.
	P101	B/T	100	100	20-20	0.5		A/AB						650			No		3500.00	
	M70	B/T/M	70	70	20-20	1		A						800			No		2350.00	
BEDINI ELECTRONICS	100 1 MEG	B	100	200		0.01	0.01	A					270			8	Yes	70	3800.00	
	250/250MKII	B	250	475	20-50	0.1	0.11	A					55			8	Var.	43	2195.00	
	150MKII	B	145	250	5-50			AB					100			6	No	26	850.00	
BEL	2002	B	100	200	3-250			A						1.7V	†		No	52	2895.00	†Status/fault indicators.
	1001	B	50	100	5-200			A						1V			No	30	1395.00	Rack mount, $1549.00; bridges to 200 watts.
DAVID BERNING CO.	EA-2100	B/T	100	100	30-50	2		AB					15	1V		2	No	40	2695.00	
	EA-230	B/T	30	30	30-70	2		AB					15	1V		1	No	30	895.00	
BGW SYSTEMS	85	B	35	45	15-50	0.1	0.03	AB/B						840		1.3	No	14	449.00	
	150	B	50	75	15-50	0.1	0.02	AB/B						1V	I	1.2	No	18	699.00	
	250D	B	100	150	15-50	0.1	0.02	AB/B						1.4V	I	1.3	No	33	869.00	
	250E	B	100	150	15-50	0.1	0.02	AB/B						1.4V	M	1.3	No	33	989.00	
	2125	B	100	150	20-20	0.25	0.05	AB/B						700			No	31	589.00	70 V out.
	320B	B	100	150	20-20	0.2	0.05	AB/B						700	I		No	39	939.00	25/70 V out.
	620B	B	200	300	20-20	0.25	0.06	AB/B						700	I		No	58	1239.00	As above.
	750D	B	250	400	10-50	0.03	0.01	AB/B					40	1.4V	I	1.5	No	50	1499.00	Drives 2-ohm loads.
	750E	B	250	400	10-50	0.03	0.01	AB/B					40	1.4V	M	1.5	No	50	1699.00	
	6500	B	100	130	10-50	0.10	0.02	AB/B						1.2V		1.0	No	25	749.00	
	7500	B	200	300	10-50	0.10	0.05	AB/B						1.2V	I	1.0	No	36	899.00	
	8000	B	225	350	10-50	0.10	0.05	AB/B						1.2V	I	1.2	No	44	1149.00	As above.
	SPA1		250	400		0.10	0.05	AB/B						1.2V	I	1.5	No	41	1529.00	Subwoofer amp.
	SPA3		250	400		0.01	0.05	AB/B						1.2V	I	1.5	No	43	1799.00	Triamp.

AMPLIFIERS

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BIAMP SYSTEMS	TF 1200	B	150	240	20-20	0.05	0.05	AB					40	1V			No	35	849.00	450 watts into 2 ohms; bridges to 670 watts into 4 ohms.
	TF 2400	B	310	510	20-20	0.05	0.05	AB					50	1V			No	48½	1199.00	650 watts into 2 ohms; bridges to 1320 watts into 4 ohms.
B & K	ST-140	B	100	100	5-45	0.09	0.09	AB								1.4	No	25	440.00	
	ST-202	B	150	200	5-45	0.09	0.09	AB								1.5	No	30	595.00	
	ST-202 Plus	B	200		5-45	0.09	0.09	AB								1.1	No	32	649.00	
	EX-442	B	200	300	5-45	0.09	0.09	AB								1.8	No	35	895.00	Dual mono; low-impedance version available.
	PRO-600	B	250	400	5-45	0.09	0.09	AB								1.1	No	38	1295.00	Dual mono; 80 amps peak to peak.
BOULDER AMPLIFIERS	500	B	150	250	0-100	0.005		AB					35		I	0	No	51	2650.00	Bridges to 500 watts; balanced and unbalanced inputs.
	160	B	60	80	0-200	0.005		AB					18		I	0	No	40	1090.00	Bridges to 160 watts; inputs as above.
	100	B	35	45	0-200	0.005		AB					18		I	0	No	23	750.00	Inputs as above.
BRITISH FIDELITY	A-1	I	20		30-20			A				Yes							350.00	
	A-100	I	50		30-20			A				Yes							695.00	
	P-170	B	85		10-55			AB											650.00	
	P-270	B	100		10-55			A											1600.00	
BRYSTON	2B-LP	B	50	100	.5-100	0.01	0.01	AB					60		I		No	20	550.00	Bridgeable; ground-lift switch.
	3B	B	100	200	.5-100	0.01	0.01	AB					60		I		No	35	975.00	As above.
	4B	B	250	400	.5-100	0.01	0.01	AB					60		I		No	50	1500.00	As above.
	6B	B/M	500	†	.5-100	0.01	0.01	AB					Sel.		I		No	100 Pair	3400.00 Pair	†1000 watts. Ground-lift switch; will drive loads greater than 1 ohm.
B & W	MPA810	B/M	650	†	0-100	0.006	0.006	AB					60		M, I	1.3		44	3500.00	†1100 watts.
CANON	AM-10	I	40	50	20-20	0.09			74	0.35	140	No			M			11	275.00	Includes graphic equalizer.
CARVER	M-1.5t	B	350	550	3-60	0.5	0.1	AB					200		I	3	No	16	899.00	Magnetic Field Amp.
	M-1.0t	B/T	200	400	3-60	0.1	0.1	AB					190		I	3	Yes	12	559.00	As above.
	M-500t	B	250	350	3-60	0.15	0.1	AB					176		M, I		Yes	23	629.00	As above.
	M-400t	B	200	300	3-60	0.5	0.1	AB					135		I		Yes	9	499.00	As above.
	M-200t	B	120	200	3-60	0.15	0.1	AB					100		I		Yes	10¼	399.00	As above.
CELLO	Performance							Var.									Var.			Modular system; $8000.00 base price; specs provided on request.
CLASSÉ AUDIO	DR-3	B	25	50	.4-80	0.1	0.1	A						800		5	No	72	2895.00	
	DR-3-VHC	B	50	100	.4-60	0.1	0.1	A						800		4	No	110	3995.00	
CONRAD-JOHNSON	MV50	B/T	45	45	20-15	1.0	1.0	AB									No	33	1485.00	
	Premier 4	B/T	100	100	20-15	1.0	1.0	AB									No	80	2950.00	
	Premier 1b	B/T	150	150	20-15	1.0	1.0	AB									No	140	4850.00	
	Premier 5	B/T/M	200	200	20-15	1.0	1.0	AB									No	80	3000.00	
CONVERGENT	JL200	B/T/M	200	200	10-60	0.5		A/AB									No		2495.00	
COUNTERPOINT	SA-12		85	140	5-100	0.8		AB								3	No	38	995.00	Hybrid; tube front-end, MOS-FET output.
	SA-20		220	420	1.2-200	0.5	0.02	AB									No	55	1995.00	As above.
	SA-20/20	M	600	700	1.2-200	0.5	0.02	AB									No	55	3990.00 Pair	As above.
	SA-4	T/M	140	96	1-100	0.2	0.65	AB Var.							M	2	No	60	5225.00 Pair	No output transformer; d.c. coupled.
CREEK	4040	I	30	40	20-20	0.01	0.5	AB	75	3.5	350		150	250			No	10	325.00	
	4140	I	30	40	20-20	0.01	0.5	AB	75	3.5	500		150	250		1	No	10	400.00	
	5050	I	50	70	20-20	0.01	0.05	AB	75	2.0	2V	Yes	150	250			No	18	800.00	
CREST AUDIO	4000	B	325	550	1-50 ±0.1	0.003	0.01	AB					70	Sel.	M, I	1.5	No	58	2279.00	Without meters, Model 4001, $2079.00.
	3000	B	240	430	1-50 ±0.1	0.003	0.01	AB					60	Sel.	M, I	1.5	No	46	1789.00	Without meters, Model 3001, $1589.00.
	2501A	B	200	360		0.005	0.01	AB					40	1V	I	1.5	No	38	1279.00	
	2001A	B	125	200		0.005	0.01	AB					33	790	I	1.5	No	32	1059.00	
	1501A	B	80	130		0.005	0.01	AB					25	610	I	1.5	No	17	839.00	
	1001A	B	40	75		0.005	0.01	AB					20	420	I	1.5	No	17	679.00	
	Powerline 400	B	290	450		0.01	0.01	AB					70	1.2V	I	1.5	No	38	1239.00	
	Powerline 300	B	220	325		0.01	0.01	AB					40	1V	I	1.5	No	32	939.00	

BEYOND CONVENTIONAL AUDIO

Onkyo's special "In-Phase" Transformer is placed between the power transformer and the capacitors. It prevents phase shift between the voltage and current in the amp-to-speaker signal path that can cause poor stereo imaging and diminished bass response.

ONKYO'S REAL PHASE POWER SUPPLY SYSTEM FOR SUPERB STEREO IMAGING AND PRECISE BASS DEFINITION

The primary function of an amplifier is to take a very small audio signal from a source such as record, tape or CD, and amplify it to a level that is strong enough to drive a loudspeaker. However, amplifiers are usually designed not with loudspeakers as a load, but instead with rather simple loads using resistors of fixed impedance. It is well known that the electrical characteristics of loudspeakers provide a complex load to the amplifier, resulting in less than ideal performance.

Typically, conventional amplifiers use a main (or primary) power transformer to convert the household AC current to lower levels suitable for the amplifier's output stage. Unfortunately, due to the reactive nature of loudspeakers, a phase shift between the power supply's charging voltage and current is inevitable. The more complex the speaker load and the music signals being amplified, the greater the phase shift. This phase degradation is audible, resulting in poor stereo imaging and a lack of bass definition.

The ONKYO Real Phase power supply uses not one, but two transformers. The primary transformer is a high current design, capable of handling substantial power levels. In addition, a second power transformer is connected in series with the primary transformer, detecting and eliminating any phase shift between charging voltage and current. The resulting output from the power supply is smooth stable DC, duplicating the ideal charging current, and free of the fluctuations caused by reactive speaker loads.

The audible benefits are striking. Sound stage and stereo imaging are precisely focused without blurring or image wander. Bass foundation and detail are significantly improved, providing convincing deep bass performance. Critics are unanimous in their praise of ONKYO's Real Phase amplifiers.

The ONKYO Real Phase power supply system is incorporated in our new Grand Integra separate amplifiers, Integra integrated amplifiers, and Integra tuner/amplifiers. Your ONKYO dealer will be pleased to demonstrate the audible superiority of Real Phase. For a detailed technical description of the Real Phase power supply system, please write to ONKYO.

Artistry in Sound

ONKYO

200 Williams Drive, Ramsey NJ 07446

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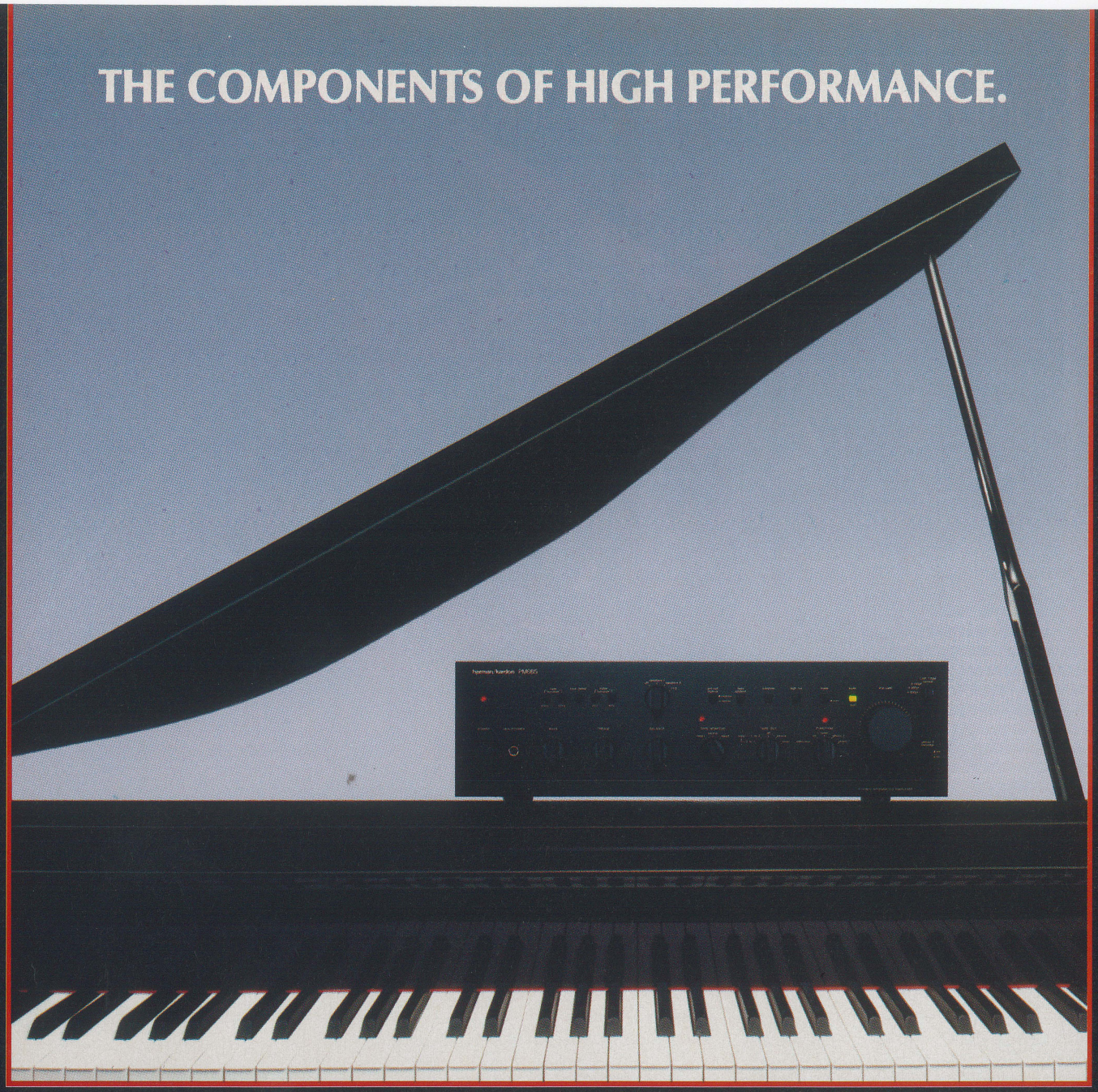

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Or write to 240 Crossways Park West, Woodbury, New York 11797.

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AMPLIFIERS

MANUFACTURER	Model (RI)=Remote Included, (RO)=Remote Optional	Unit Type: Integrated=I, Basic=B, Tube=T, Mono=M	Cont. Average Watts/Channel into 8 Ohms	Cont. Average Watts/Channel into 4 Ohms	Power Bandwidth, Hz to kHz	Rated THD, %	Rated IHF IM, %	Class of Output Operation	MM Phono S/N, –dB, "A" Wtd. re: 5 mV	MM Phono Sensitivity, mV	Maximum MM Phono Input, mV	Moving Coil Input?	Rated Slew Rate, V/μS	High Level Sensitivity, mV	Meters=M, Peak/Clip Indicators=I	Dynamic Headroom, dB	Does Unit Invert Phase?	Weight, Lbs.	Price, $	Notes
CROWN INTERNATIONAL	D-75	B	40	55	20-20	0.001	0.05	AB/B					6	812	I			10	524.00	
	D-150A-2	B	80	125	1-20	0.001	0.05	AB/B					6	1.2V	I			24	699.00	
	DC-300A-2	B	155	250	1-20	0.001	0.05	AB/B					8	1.8V	I			45	999.00	
	PS-200	B	90	135	1-20	0.001	0.05	AB/B					16	1.3V	I			25	819.00	
	PS-400	B	165	260	1-20	0.001	0.05	AB/B					16	1.8V	I			55	1259.00	
	PSA-2X	B	220	350	1-20	0.002	0.01	AB					30	2.1V	I			57	1699.00	
	MT-600	B	220	275	20-20	0.1	0.05	AB/B					13	2.2V	I			39¼	899.00	Version with plug-in panel, extra indicators, and rack handles, Model MT-600LX, $1169.00.
	MT-1200	B	320	470	20-20	0.1	0.05	AB/B					13	2.2V	I			44¼	1169.00	Model MT-1200LX, with features above, $1369.00.
	Delta-Omega 2000	B/M	730	†	0-45	0.05	0.05	AB/B					32	Sel.	I			92	3195.00	†1300 watts.
CURTIS MATHES	AA310(RI)	I	110		10-80	0.03	0.05	A	71	2.5	150			150	I	1.5				
	AA210	I	100		10-80	0.03	0.05	A	71	2.5	150			150	I	1.5		13.4		
DAX	A100	I	100	150	20-20	0.1		A				No	100	125		14		25	599.00	
DB SYSTEMS	DB-6A	B	40	60	20-40	0.003	0.002	AB					15	1V	I	3	No	18	750.00	
	DB-6A-M	B/M	140	225	20-40	0.008	0.004	AB					30	1V	I	3	No	18	750.00	Per pair, $1450.00.
DEFINITIVE AUDIO	S.S.2	B/T	100	80	20-20	1		AB1									No		3795.00	Triode-connected tube.
	S.S.3	B/T/M	100	75	20-50	0.7		AB1							M		No		2500.00	Output transformerless; special order.
DENNESEN	Antares	B	75	120	5-100	0.01	0.01	AB				No	50	1V		3	No	21	600.00	
DENON	PMA-300V	I	60	80	20-20	0.05	0.005		86	2.5	160	Yes		150				13	250.00	
	PMA-500V	I	80	130	20-20	0.05	0.003		88	2.5	160	Yes	150	150				21	370.00	No negative feedback.
	PMA-700V	I	100	150	20-20	0.02	0.003		94	2.5	160	Yes	350	150				24	530.00	As above.
	PMA-900V	I	120	200	20-20	0.02	0.003		95	2.5	160	Yes	350	150				25	700.00	As above.
	POA-2200	B	200	300	20-20	0.02	0.002						500		I		Yes	38	675.00	
	POA-3000ZK	B	250	400	5-80	0.002	0.002	A					500		M, I		Yes	66	2400.00	As above; d.c. servo control.
DIMENSIONAL OPTICS	Silicon Laser Matrix	B/M	150	285	5-100									600		3	No	20	2250.00 Pair	High current output devices.
	Silicon Laser Matrix	B	150	285	5-100									600		3	No	25	1550.00	As above.
DISTECH	LSII	B	100	200	3-100	0.05	0.09	AB					40			3.2	No	25	950.00	MOS-FET.
DUAL	CV1260	I	60	80	10-45	0.03	0.03	A	64	2.5	250		50	100	M	3	Ne	18	250.00	
ELECTRO-COMPANIET	AW 65	B	75	135	0-100	0.004		AB									No	32	1550.00	
	AW 100	B	100	180	0-100	0.003		AB									No	40	2025.00	
	AW 150	B	150	270	0-100	0.003		AB									Yes	45	2675.00	
ELECTRON KINETICS	Eagle 2A	B	120	240	0-200	0.1	0.1	AB					220	1.3V		1.0	No	32	1295.00	
	Eagle 3	B	250	500	0-200	0.1	0.1	AB					300	1.3V		1.0	No	47	2200.00	
	Eagle 7A	B	300	550	0-500	0.1	0.1	AB					680	2V		0	No	110	3950.00	
ESOTERIC AUDIO RESEARCH	509	B/T/M	100	100	12-60	0.25	0.2	A						300		3	No	35	2500.00 Pair	
	511	B/T/M	100	100	12-60	0.25	0.2	A						300		3	No	36	3800.00 Pair	
	529	B/T/M	500	500	12-60	0.25	0.2	A						1.5V		3	No	88	10,000. Pair	
FISHER	TA102	I	100		20-20	0.05	0.05			2.5	125				I			16.7		
	TA150	I	150		20-20	0.009	0.009			2.5	200				I			27		
FOCAL	Module 130	B	60	60	5-60	0.03	0.03	B						600			No	8	260.00	Kit; MOS-FET; bridges to 130 watts.
FUJITECH	A1033	I/T	30	30	20-20	0.4	0.9		72	2.2	190	No	40	190	No	6	No	48	449.50	Kit.
GROMMES PRECISION	G252HF	B	90	125	20-20	0.05	0.05	AB					30	750	M	1.5	No	31	627.00	Bridges to 250 watts.
GSI	A-1	B	125	250	.2-300	0.01	0.01	AB					100	600		1	No	20	1395.00	D.c.-servo hybrid.
	A-2	B	400	800	.2-300	0.01	0.01	AB					80	700		2	No	50	2495.00	As above.
	A-3	B	50	100	.5-125	0.01	0.01	AB					100	700		1	No	15	795.00	As above.
DAVID HAFLER CO.	DH-500	B	255	400	20-20	0.025	0.007	AB					45	145		2.3	No	45	850.00	Kit, $675.00.
	DH-220	B	115	175	20-20	0.02	0.005	AB					30	145		1.8	No	26	500.00	Kit, $400.00.
	DH-120	B	62	75	20-20	0.009	0.005	AB					45	145		2.5	No	18	320.00	Kit, $260.00.
HARMAN/ KARDON	PM635	I	30		10-60	0.09		AB	80	2.2	185		80	135			No	13½	235.00	
	PM645	I	40		10-80	0.09		AB	78	2.2	130		90	135			No	14¼	310.00	
	PM655	I	60		10-100	0.08		AB	78	2.2	220		180	135			No	22¼	550.00	
	PM665	I	100		10-100	0.08		AB	78	2.2	220		180	135			No	33	775.00	
	870	B	100		10-80	0.06		AB						1V			No	30	650.00	

AMPLIFIERS

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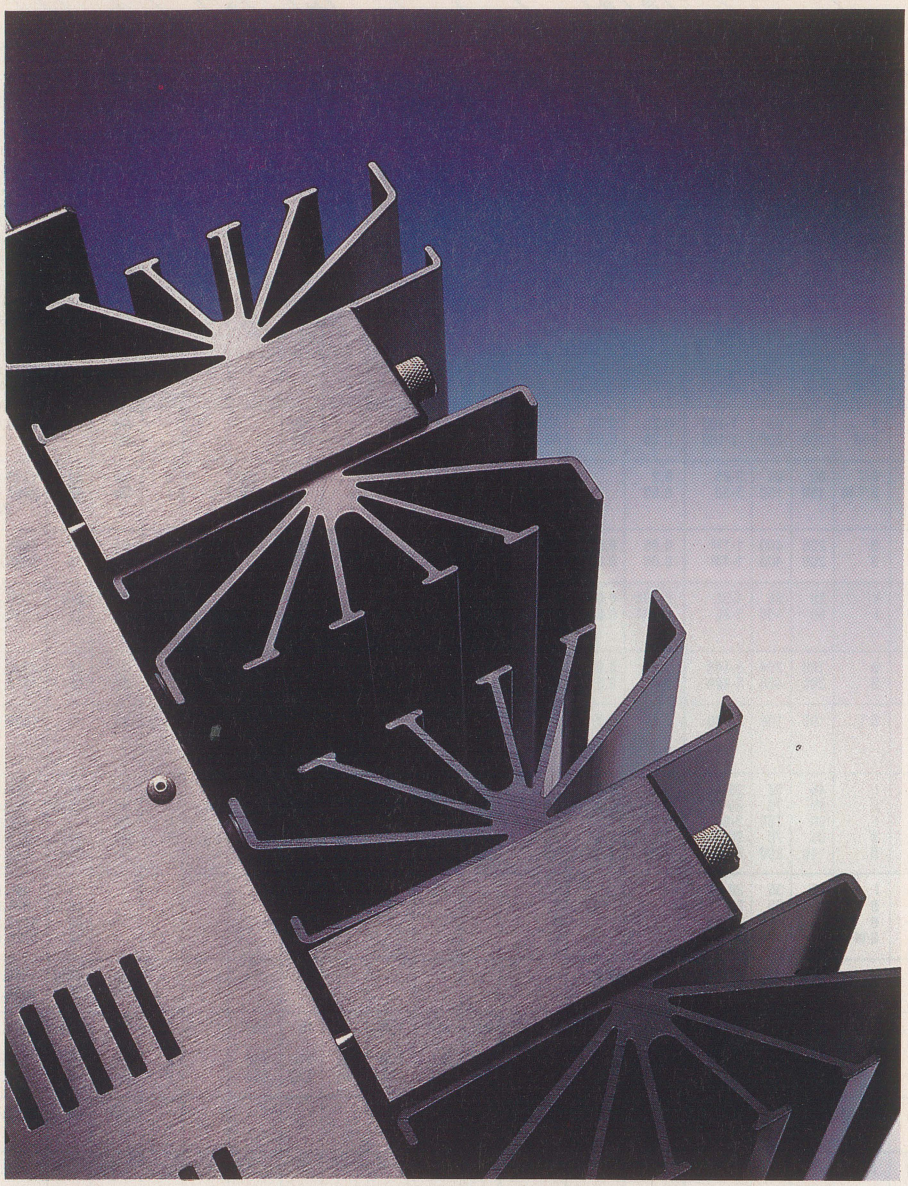
HEYBROOK	P-2	B	80	120	20-50	0.01	0.01	AB										28	898.00	
HITACHI	HA6	I	100		20-20	0.005	0.008	B	90	2.5							No	25	430.00	
	HMA8500II	B	100		20-20	0.005	0.008	B							M		No	35	650.00	
	HMA120AV	B	120		20-20	0.08	0.08	B							M		No	17.7	300.00	
JADIS	JA-200	B/T/M	160	160	20-20			A					750				No	210	10,900.	Four chassis.
	JA-80	B/T/M	60	60	20-20			A					750				No	77	7200.00	
	JA-30	B/T/M	30	30	20-20			A					750				No	48½	3600.00	
JORDAN	Amplifier One	B	75	100	14-140	0.01	0.01	AB					2V					13.2	875.00	
JRM	Power Tower	B/M	†	††	3-75	0.02	0.02	AB				100	†††	M, I	1.0	No		65	2500.00	†(2)200 and (2)60 watts. ††(2)700 and (2)200 watts into 2 ohms. †††(2)2.0 and (2)1.1 V. All-cascode design.
	Power Tower/ B Pro	B/M	†	††	3-75	0.02	0.02	AB				100	†††	M, I	1.0	No		75	3100.00	†(2)600 and (2)150 watts. ††(2)900 and (2)300 watts. †††(2)2.0 and (2)1.1 V. All-cascode design; bridged outputs.
JVC	AX-90VBK(RI)	I	120		5-50	0.007	0.007	Sup. A	83	2.5			230	I				22.1		
	AX-70BK	I	70		5-30	0.007	0.007	Sup. A	83	2.5			190	I				17.2		
KENWOOD	KA-1100SD	I	150	228	5-90	0.004	0.003		94	2.5	200	Yes	100	150				32.3	705.00	
	Basic-M2A	B	220	350	5-100	0.004	0.004								M			34.1	600.00	
	KA-880SD	I	100	140	5-50	0.005	0.005		92	2.5	200	Yes		150				20.7	355.00	
	Basic-M1A	B	110	150	5-60	0.004	0.004											20	330.00	
	KA-95	I	125		10-60	0.05			79	2.5	140	No			M			18.7	320.00	
	KA-75	I	80		10-50	0.09			81	2.5	150	No			M			14.5	235.00	
	KM-205	B	150		10-50	0.03									M			18.7	355.00	
	KM-105	B	125		10-50	0.03									M			17.4	295.00	
KINERGETICS	KBA-200	B	200	300	3-100	0.01	0.01	AB					90	1.5V		3.0	No	55	1495.00	Dual mono.
	KBA-75	B	75	90	3-100	0.02	0.02	A					65	1.5V		3.0	No	32	1095.00	As above.
KRELL	KSA 50	B	50	100	.05-100	0.06	0.06	A					100			0	No	66	2300.00	
	KSA 100	B	100	200	.05-500	0.05	0.05	A					400			0	No	110	3300.00	
	KMA 100	B/M	100	200	0-1M	0.05	0.05	A					500			0	No	70	5500.00 Pair	2000 watts into 0.1 ohm.
	KMA 200	B/M	200	400	0-1M	0.05	0.05	A					800			0	No	120	8000.00 Pair	10,000 watts into 0.1 ohm.
	KRS Balanced 150	B/M	150	300				A								0	No	150	10,000. Pair	Balanced Class-A operation to 1 ohm.
	KRS Balanced 250	B/M	250	500				A								0	No	200	15,000. Pair	As above.
KYOCERA	A-710	I	100	140		0.03	0.03	AB	85	2.2	190	Yes	60	200	I	0.7	No	44	800.00	
	A-910	I	150	200	10-35	0.03	0.03	AB	85	2.2	180	Yes	90	250	I	1.2	No	50	1500.00	
	B-910	B	150	200	10-50	0.02	0.02	AB						1.5V			No	59	2000.00	
LAZARUS ELECTRONICS		B	†	†	10-100	0.1		Opt.†						700	No		Yes	35	1599.00	†Class AB, 100 watts into 8 ohms and 200 watts into 4 ohms; Class A, 50 watts into 8 ohms and 100 watts into 4 ohms. Hybrid.
MARK LEVINSON	ML-11	B	50	100	20-20			AB									No	25	2000.00	
	ML-9	B	100	200	20-20			AB									No	56	3250.00	
	ML-3	B	200	400	20-20			AB									No	116	6400.00	
	NO-20	B/M	100	200	20-20			A									Sel.	70	4800.00	
	ML-2	B/M	25	50	20-20			A									Sel.	65	4800.00	
LINEAGE	PA200	B	100		1-100	0.1	0.1	AB1					100	1.5	I		No		1500.00	
LINN	LK2	B	60		20-20												No	20	695.00	
LSR&D	The Leach Amp	B	160	300	.37-220	0.05	0.05	AB					70	1.8V	I	1.7	No	34	970.00	Twin toroidal power supply; kit, $580.00.
	The Leach Super-Amp	B/M	300	500	.3-200	0.05	0.05	AB					80	2.4V	I	2.0	No	34	970.00	As above.
LUXMAN	LV-105	I/T	80		20-20	0.3	0.01	AB	90	2.5	160	Yes		150				23.3	800.00	
	LV-109	I	150		20-20	0.009	0.009	AB						150				42.1		
	M-02	B	140		20-20	0.025	0.025	AB						1.2V	M			31.9	800.00	
	M-05	B	105	210	20-20	0.025	0.025	A						750	M			88.4	3300.00	
	LV-90	I	28		20-20	0.05	0.015	AB	87	2.5		No		150				12.1	220.00	
	LV-100	I	35		20-20	0.05	0.015	AB	88	2.5		No		150				13.2	300.00	
	LV-101	I	45		20-20	0.03	0.005	AB	88	2.5		Yes		150				18.7	420.00	
	LV-102	I	65		20-20	0.03	0.005	AB	90	2.5		Yes		150				19.8	550.00	
	LV-103	I/T	50		20-20	0.3	0.01	AB	90	2.5	160	Yes		150				22.4	650.00	
MAN	MMA-1	B/T/M	70	70	5-78			AB								3		30	4290.00	

A VIEW FROM THE TOP



HEATSINK—July 1986

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AMPLIFIERS

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MARANTZ	PM560	I	110		20-20	0.04	0.04	AB	85	2.5	150			150				23	500.00	
McINTOSH	MA6200	I	75	100	20-20	0.02	0.02	AB	80	2.0	95	No	15	250	I	1.3	No	30	1795.00	
	MC2500	B	500	500	20-20	0.02	0.02	AB					35	Var.	M, I	1.3	No	129	3495.00	
	MC7270	B	270	270	20-20	0.02	0.02	AB					17	Var.	M, I	1.6	No	82	2295.00	
	MC2002	B	200	300	20-20	0.01	0.01	AB					25	Sel.	M, I	1.7	No	50	1850.00	
	MC2155	B	150	150	20-20	0.02	0.02	AB					15	Var.	M, I	1.4	No	65	2295.00	
	MC2150	B	150	150	20-20	0.02	0.02	AB					15	Var.	I	1.4	No	58	1925.00	
	MC752	B	75	100	20-20	0.02	0.02	AB					15	Var.	I	1.3	No	21	895.00	
	MC502	B	50	75	20-20	0.02	0.02	AB					15	Var.	I	1.8	No	27	1200.00	
McLAREN AUDIO	702	B	120	180	10-50	0.05											No	31	1195.00	
	902	B/M	250	450	10-50	0.05											No	31	1195.00	
MEITNER AUDIO	STR-50	B	50	95	.1-100	0.25	0.25	AB					100				No		1295.00	
	MTR-100	B/M	100	200	.1-100	0.25	0.25	AB					100				No			
MELOS AUDIO	TM90 ST	B/T	80	80	5-65	0.2		AB						1.5V		4	No	44	1295.00	
	TM160	B/T/M	150	150	5-50	0.09		AB2						1.5V		4	No	65	2495.00 Pair	
MIRROR IMAGE	1.1S	B	200	400	1-1M	0.05	0.05	AB					300		I		No	47	1995.00	D.c. coupled.
	4.3S	B	200	400	1-1M	0.05	0.05	AB					300		I		No	75	3695.00	1600 watts into 1 ohm.
MISSION	Cyrus I	I	30	50	1-55	0.004	0.005	AB	82	0.4		Yes		65		1.4	No	8.8	399.00	
	Cyrus II	I	60	100	1-55	0.004	0.004	AB	84	0.3		Yes		50		1.4	No	11	599.00	External power supply, Cyrus PSX, $449.00.
MOTIF	MS100	B	100	200	5-100	0.5	0.5	AB									No	45	2900.00	
	MS200	B	200	400	5-100	0.5	0.5	AB									No	68	4350.00	
MUSIC REFERENCE	RM-9	B/T	100	100	20-40	0.2	0.2	A/AB						400	I	1.5	No	55	1850.00	Variable feedback; set-up indicators; 2-, 4-, and 8-ohm taps.
NAD	3130	I	45	58	20-40	0.03	0.03	AB	76	3.5	180	Yes	15	28	No		No	18	228.00	
	3155	I	65	75	20-40	0.03	0.03	AB	78	2.8	170	Yes	20	25	No	3	No	21⅝	448.00	Bridgeable.
	3300	I	80	100	3-60	0.03	0.03	AB	80	2.4	170	Yes	30	25	I	6	No		498.00	As above.
	2155	B	65	75	20-40	0.03	0.03	AB					20	25	No	3	No	20½	348.00	As above.
	2200PE	B	140	200	3-80	0.03	0.03	AB					35	70	I	7	No	30¾	548.00	As above.
NAIM AUDIO	NAIT	I	20	35	20-20			B		2.5			75					11	495.00	
	NAP 110	B	40	55	20-20			B										14	675.00	
	NAP 250	B	70	125	20-20			B										30	1795.00	
	NAP 135	B/M	75	135	20-20			B										32	1795.00	
NAKAMICHI	PA-7	B	200	330	5-50	0.1	0.1								I		No	59½	1750.00	
	PA-5	B	100	160	5-50	0.1	0.1								I		No	35¼	1095.00	
NEC	A-1300E(RI)	I	130		10-70	0.05	0.05	B	73	2.5	150		18	150	I	3		30½	699.00	50 watts x 4 into 8 ohms.
	A-7E	I	50	100	20-20	0.006	0.006	AB	90	2.5	150	Yes	110	150		2	No	28	349.00	
	A-10E	I	60	120	20-20	0.004	0.004	AB	90	2.5	150	Yes	120	150		2	No	53	599.00	
NESTOROVIC LABS	α -1	B/T/M	150	150	20-20	0.5	0.2	AB									Var.	65	2200.00	Variable feedback.
NEW YORK AUDIO LABS	Moscode 151	B	75	120	10-100	0.10	0.1	AB					30				No		700.00	Hybrid tube; maxi version (with additional bypass capacitors in power supply and tubes of better quality), $850.00
	Moscode 301	B	150	220	10-100	0.15	0.1	AB					30				No		1100.00	As above; maxi version, $1300.00.
	Moscode 601	B	300	420	10-100	0.15	0.1	AB					30				No		1800.00	As above; maxi version, $2100.00.
	Moscode 901	B	450	600	10-100	0.15	0.1	AB					30				No		3500.00	As above; maxi version, $4200.00.
	OTL-1 Futterman	B/T/M	80		5-200	0.01	0.001	AB					33		M		No	250	12,000.	Four chassis; 5-kW regulated power supplies; output transformerless; 150 watts into 16 ohms.
	OTL-2 Futterman	B/T	10		5-200	0.01	0.001	AB							M		No	75	4200.00	Two chassis; triode output; output transformerless; 20 watts into 16 ohms.
	OTL-3 Futterman	B/T	80		5-200	0.01	0.001	AB							M		No	150	6000.00	Dual mono; output transformerless; 125 watts into 16 ohms.
	OTL-4 Futterman	B/T	40		5-200	0.01	0.001	AB							M		No	75	3600.00	Output transformerless; 60 watts into 16 ohms.
NIKKO	A-650	B/M	300	600	10-40	0.008	0.008	AB						1V	M		No	60½	1995.00	Bridgeable.
	A-450	B	220	440	5-100	0.008	0.008	AB						1V	I		Var.	47⅜	999.95	Uses variable bias circuit; nonswitching.
	A-230	B	120	240	5-100	0.008	0.008	AB						1V	I		Var.	29⅜	549.95	As above.
	A-130	B	100	200	10-40	0.003	0.003	AB						1V	I		No	28½	399.95	
	NA-2000	I	85	170	5-45	0.01	0.01	AB	86						I		Var.	22	329.95	As above.

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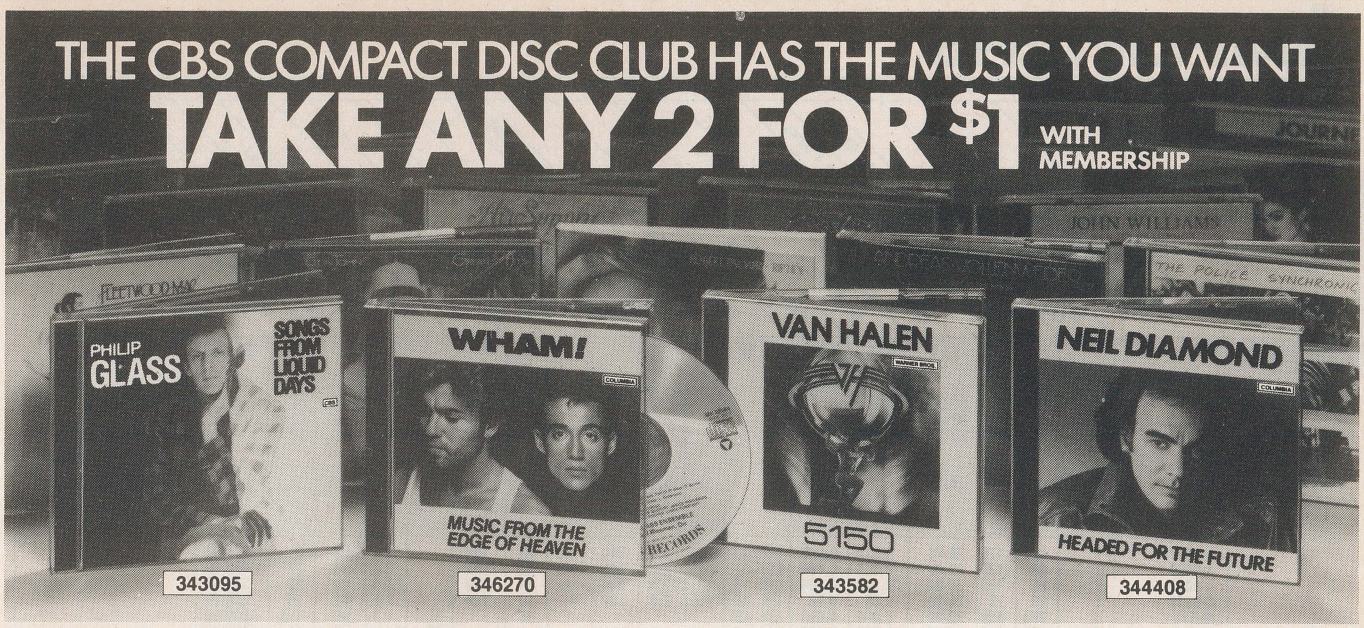

337519. Heart. Top 10 Album. *What About Love; Never ;* etc. (Capitol)

319541. Elton John—Greatest Hits. *Daniel; Crocodile Rock;* more. (MCA)

324822. Ravel: Bolero; Rapsodie Espagnole; La Valse; etc.—Maazel cond. (*Digital*—CBS Masterworks)

343715. Vivaldi: Four Seasons Maazel, members Orch. National de France (*Digital*—CBS Masterworks)

343947. Tony Bennett—The Art Of Excellence. Tony's back! (Columbia)

336396-396390. Billy Joel's Greatest Hits, Volumes 1 & 2. (Counts as 2—Columbia)

344085. John Williams—Echoes Of London. Master guitarist's best! (CBS)

273409. Vladimir Horowitz Plays Favorite Beethoven Sonatas. *Moonlight;* etc. (Columbia)

344135. Jean-Pierre Rampal—A Night At The Opera. Domingo conducts. (*Digital*–CBS Masterworks)

326629. Bruce Springsteen—Born In the U.S.A. (Columbia)

333286. Phil Collins—No Jacket Required. (Atlantic)

335547. Berlioz: Symphonie Fantastique Barenboim, Berlin Phil. (*Digital*—CBS Masterworks)

263293. Bolling: Suite For Flute & Jazz Piano—Rampal, Bolling (Columbia)

339200. Stevie Wonder—In Square Circle. #1 album. (Tamla)

337402. The Manhattan Transfer—Vocalese. Top 10 album. (Atlantic)

343624. Wynton Marsalis. Plays Trumpet Concertos. Haydn, Hummel, L. Mozart (*Digital*—CBS Masterworks)

341263. Enoch Light & The Light Brigade—Big Bands Of The Thirties. *Begin The Beguine;* more. (Project 3)

340323. Sade—Promise. #1 Smash. (Portrait)

219477. Simon & Garfunkel's Greatest Hits. *El Condor Pasa; Bridge Over Troubled Waters;* etc. (Columbia)

331645. Madonna—Like A Virgin. #1 album & hits *Material Girl; Angel.* (Sire)

323261. Lionel Richie—Can't Slow Down. *All Night Long; Stuck On You; Hello;* etc. (Motown)

320499. The Police—Synchronicity. Winner of 3 Grammy Awards! (A&M)

318089. Michael Jackson—Thriller. *Billy Jean; The Girl Is Mine;* etc. (Epic)

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316604. Tchaikovsky: 1812 Overture; Marche Slave; Beethoven: Wellington's Victory. Lorin Maazel, Vienna Phil. (*Digital*-CBS Masterworks)

342097. Barbra Streisand—The Broadway Album. *Somewhere; Something's Coming;* more. (Columbia)

323337. The Big Chill. Original Motion Picture Soundtrack. (Motown)

321570. Beethoven: Symphony No. 5; Schubert: Symphony No. 8—Lorin Maazel, Vienna Phil. (*Digital*—CBS Masterworks)

313734. Willie Nelson—Always On My Mind. #1 Hits. And Top 10 Title Song: *Let It Ee Me;* more. (Columbia)

293597. Led Zeppelin—Houses Of The Holy. Includes hit *O'Yer Maker;* more. (Atlantic)

287003. Eagles—Their Greatest Hits 1971-1975. *Desperado; Best Of My Love;* more. (Atlantic)

345207. Buddy Holly—From The Original Master Tapes. (MCA)

321307. Air Supply—Greatest Hits. (Arista)

286914. Fleetwood Mac—Rumours, #1 Hit Album. Includes *Don't Stop; You Make Loving Fun;* more. (Warner Bros.)

345892. Ruthless People—Original Motion Picture Soundtrack. Includes Billy Joel hit *Modern Woman,* also Springsteen, Paul Young; more. (Epic)

346643. Andreas Vollenweider—Down To The Moon. The Inventive Harpist's Latest (CBS)

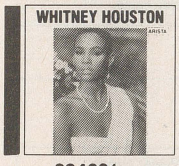
345827. Bob James and David Sanborn—Double Vision. Joined by Al Jarreau, others. Includes *Since I Fell For You.* (Warner Bros.)

341305. Robert Palmer—Riptide. The voice of Power Station's Top 10 album! *Addicted to Love;* more. (Island)

343293. Rolling Stones—Dirty Work. Top 10/MTV smashes: *Harlem Shuffle* and *One Hit (To The Body);* more (Rolling Stone Rec.)

341677. Schubert: Symphonies 2 & 8. Barenboim, Berlin Phil. (*Digital*—CBS Masterworks)

346015. Handel: Royal Fireworks Music; more—Malgorie, LaGrande Ecurie & la Chambre duRoy (*Digital*—CBS Masterworks)



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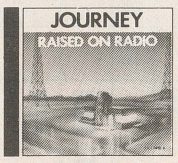

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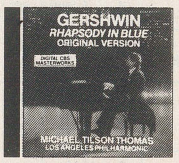

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AMPLIFIERS

MANUFACTURER	Model (RI)=Remote Included, (RO)=Remote Optional	Unit Type: Integrated=I, Basic=B, Tube=T, Mono=M	Cont. Average Watts/Channel into 8 Ohms	Cont. Average Watts/Channel into 4 Ohms	Power Bandwidth, Hz to kHz	Rated THD, %	Rated IHF IM, %	Class of Output Operation	MM Phono S/N, – dB, "A" Wtd. re: 5 mV	MM Phono Sensitivity, mV	Maximum MM Phono Input, mV	Moving Coil Input?	Rated Slew Rate, V/μS	High Level Sensitivity, mV	Meters=M, Peak/Clip Indicators=I	Dynamic Headroom, dB	Does Unit Invert Phase?	Weight, Lbs.	Price, $	Notes
NOVA ELECTRO-ACOUSTICS	DMA-300	B	150	275	20-20	0.02	0.01	Lin. AB					40	1V		2	No	45	1695.00	
NUMARK	SA2500	B	280	450	20-20	0.039		AB					50	2.5V	I	1.2	No	57		
	SA220A	B	165	225	20-20	0.039		AB					50	1.7V	I	1.5	No	40		
	SA110	B	55	60	20-20	0.05		AB					15	930	M	1.2	No	19		
ONIX AUDIO	OA21	I	50	70	20-20	0.01	0.009	AB	75	1.75		Opt.	150	250			No	11	650.00	Add-on power supply, Model S.O.A.P, $350.00.
ONKYO	A-8087	I	100	170	20-20	0.012	0.005	Lin. AB	80	2.5	210	Yes	35	150		1.6	No	31	550.00	
	A-8067	I	80	135	20-20	0.015	0.005	Lin. AB	80	2.5	200	Yes	32	150		2.3	No	27	450.00	
	A-8057	I	65	100	20-20	0.018	0.005	Lin. AB	80	2.5	200	Yes	30	150		1.9	No	23	330.00	
	A-8037	I	50	75	20-20	0.06	0.06	Lin. AB	75	2.5	200	No	20	150		1.5	No	15	230.00	
	M-510	B	300	500	20-20	0.005	0.003	Lin. AB					45		M	1.3	No	165	4200.00	
	M-508	B	200	315	20-20	0.003	0.002	Lin. AB							M		No	55	1100.00	
	M-504	B	150	240	20-20	0.003	0.002	Lin. AB					30		M		No	49	750.00	
PARASOUND	CA250	I	50	85	20-40	0.03	0.015	AB	88	2	200		55	500	I	2	No	16	299.95	
	CA215	I	15	28	30-20	0.1	0.03	AB	82	2	160		22	500		1	No	11	129.95	
	PA260	B	60	90	20-20	0.02	0.02	AB					95	250		2	No	15	239.95	Bridges to 150 watts.
	VSE1	I	12.5	18	30-20	0.5	0.05	AB					15	250		0.6	Var.	11	129.95	Stereo synthesizer.
	D/AS 1000	B	130	185		0.1	0.05	A					90		I	6		40	585.00	Bridges to 1000 watts into 2 ohms; cascode input.
PERREAUX	PMF 1050	B	100	160	10-3M	0.03	0.03	A/AB								2	No	27	1050.00	
	PMF 1850	B	180	330	10-3M	0.015	0.015	A/AB								2	No	42	1895.00	
	PMF 3150	B	300	500	10-3M	0.03	0.03	A/AB								2	No	55	2395.00	
PIONEER	A-V1200	I	80	120	20-20	0.007	0.007		86	2.5	160	Yes		150				25.2	539.95	
	SA-V1160	I	100		20-20	0.05	0.05		81	2.5	150	No		150				17.1	329.95	
	M-90 Elite	B	200		20-20	0.003	0.003								M†			49.1	899.95	†Peak-hold meter.
	A-88X Elite	I	120		20-20	0.003	0.003		89	2.5	250	Yes		150				39.1	699.95	
	A-77X Elite	I	100		20-20	0.003	0.003		88	2.5	200	Yes		150				33.1	499.95	
	SA-V70(RI)	I	†		20-20	0.04				2.5		No						22.1	450.00	†Front, 50 watts; rear, 25 watts. Five audio inputs, five video inputs; surround-sound circuitry.
PROTON	D1200(RO)	B/T	110	175	10-40	0.02	0.02	H					60		M, I	7.3		33	599.00	
	D540	I	40	80	20-20	0.02		H	92	2.5				150	M, I	6		19¼	299.00	
	D530R(RO)	I	30	50	20-20	0.02	0.02		90	2.5				150	M, I	6			299.00	
PS AUDIO	200-C	B	200	400	1-50	0.01	0.01	AB					250				No	70	1795.00	Dual mono.
PSE	Studio II	B	100	200	0-100	0.02	0.02	AB					100				No	24	790.00	
	Studio II Mono	B/M	110	220	0-150	0.02	0.02	AB					100				No	24	710.00	
QED	A230S	I	30	50	10-30	0.1		AB	72	3	120	No		300	No		No	10	275.00	
	A240CD	I	40	65	5-30	0.1		AB	72	3	120	No		300	No		No	11	350.00	
	A240SA	I	40	65	5-30	0.1		AB	72	3	120	Yes		300	No		No	11	525.00	
QUAD	306	B	†		20-20	0.03		††						375				10	595.00	†Power curves available on request. ††Current Dumping.
	405-2	B	100		20-20	0.05		††						500				20	695.00	
	606	B	†		20-20	0.03		††						500				26	995.00	
QUICKSILVER	Mono Amp	B/T/M	60	60	13-55			AB									No	30	675.00	Can drive 0.5-ohm load.
RANE	MA6	B	100	150	20-20	0.2	0.1	AB					20		I	15	No	44	1299.00	Six-channel; with limiters.
RCA	Dimensia MSA 100(RO)	I	50		20-20	0.05	0.09	AB	75		150	No			M			12.6	299.00	
	Dimensia MSA 200 (RO)	I	100		20-20	0.05	0.09	AB	75		150	No						19.8	399.00	
REVOX	B251(RO)	I	100	140	20-20	0.01	0.01	AB	75	1.6	23	Opt.		160	M		No	18¾	1500.00	
	B242	B	200	300	20-20	0.005		AB						Adj.	M	3	No	37½	2325.00	
ROBERTSON AUDIO	Forty Ten	B	60	120	.5-330	0.1	0.05	AB					159				No	25	995.00	
	Sixty Ten	B	200	400	.5-250	0.1	.0023	AB					256				No	65	2550.00	
ROTEL	RB-880	B	100	200	20-20 ±1	0.01	0.01	AB								1.6	No	40	1099.00	60 amps peak to peak.
	RB-870	B	60	115	20-20 ±1	0.03	0.03	AB											479.00	
	RA-870	I	60	115	20-20 ±1	0.03	0.03	AB	81	1.85	185	Yes	3.5	200		3	No	21	599.00	Dual mono.
	RA-840BX	I	40	58	20-20	0.03	0.03	AB	78	2.5	140	Yes		150		3	No	17	399.00	29 amps peak to peak.
	RA-820BX	I	25	35	20-20	0.05	0.05	AB	75	3	140	No		150		3	No	12	289.00	25 amps peak to peak.
	RA-820	I	20	30	20-20	0.05	0.05	AB	72	3	140	No		150		3	No	12	209.00	20 amps peak to peak.

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AMPLIFIERS

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Unit Type: Integrated = I, Basic = B, Tube = T, Mono = M	Cont. Average Watts/Channel into 8 Ohms	Cont. Average Watts/Channel into 4 Ohms	Power Bandwidth, Hz to kHz	Rated THD, %	Rated IHF IM, %	Class of Output Operation	MM Phono S/N, – dB, "A" Wtd. re: 5 mV	MM Phono Sensitivity, mV	Maximum MM Phono Input, mV	Moving Coil Input?	Rated Slew Rate, V/μS	High Level Sensitivity, mV	Meters = M, Peak/Clip Indicators = I	Dynamic Headroom, dB	Does Unit Invert Phase?	Weight, Lbs.	Price, $	Notes
ROWLAND RESEARCH	5	B	150	300	.25-220	0.05	0.05	A/AB					114			No	75	3695.00	
	7	M	350	700	.25-130	0.05	0.05	A/AB					114			No	115	3750.00	
SAE	I102	I	60	90	20-20	0.02	0.02	AB	82		150	Yes	150	M	1.0	No	26	499.00	Programmable tone memories.
	A202	B	100	150	20-20	0.02	0.02	AB						M	1.2	No	31	449.00	
	A502	B	200	300	20-20	0.02	0.02	AB						M	1.2	No	43	649.00	Bridges to 600 watts.
	A201	B	100	150	20-20	0.02	0.02	AB						M	1.2	No	35	650.00	Bridges to 375 watts.
	X10A	B	100	150	20-20	0.02	0.02	A						M	1.5	No	35	900.00	As above.
	P50	B/M	70	115	20-20	0.05	0.017	AB					25	I	3.0	No	21	600.00	
	P500	B/M	500	750	20-20	0.05	0.025	AB					25	M	1.0	No	80	1700.00	
SANSUI	B-2301	B	300		20-20	0.003	0.003						300	M, I			81.6	2600.00	X-balanced circuitry.
	B-2102	B	200	350	20-20	0.003	0.003						350	M, I			39.7	1000.00	As above.
	AU-G90X	I	130		20-20	0.003	0.003		90	2.5	300	Yes	350				37.4	1000.00	As above.
	AU-G99X	I	160		20-20	0.003	0.003		85	2.5	200	Yes	350	M			38	1000.00	As above.
	AU-G77XII	I	110		20-20	0.003	0.003		85	2.5	200	Yes	300	M			26.5	650.00	As above.
	AU-G55X	I	65		20-20	0.004	0.004		85	2.5	150	Yes	200				18.5	500.00	As above.
SESCOM	PO-3	B	2		20-20	0.1	0.1					No		200		No	1	45.00	Requires PO-1 power supply.
	PO-4	B/M	4		20-20	0.1	0.1					No		200		No	1	32.50	As above.
	PO-5	I	2		20-20	0.1	0.1		75	1.75	150	No		200		No	1	75.00	As above.
SHARP	SM-V1	I	28														9¾	195.00	
SIMA ELECTRONICS	W-2050	B	50	90	20-20	0.05	0.05	AB					60	500		No	15	495.00	
	W-2002	B	125	225	20-20	0.05	0.05	AB					60	1V	I	No	29	775.00	
	W-2003	B	250	450	20-20	0.05	0.05	AB					60	1.5V	I	No	49	1395.00	
	PW-2000	I	50	90	20-20	0.05	0.05	AB	75	3	200		60	200		No	15	625.00	
SONY	TA-F444ESII	I	100	130	5-100	0.004	0.004	AB	87	2.5	250	Yes	250	150		1.8	No	32½	450.00	
	TA-F222ES	I	80	110	5-100	0.006	0.006	AB	86	2.5	250	Yes	200	150		2	No	28¾	350.00	
SOUND-CRAFTSMEN	Pro-Power Four	B	205	300	20-20	0.05	0.05	AB					50	1.2V	M, I	1.7	No	30	699.00	
	Pro-Power Three	B	205	300	20-20	0.05	0.05	AB					50	1.2V	I	1.7	No	30	599.00	
	A5002	B	250	375	20-20	0.05	0.05	H					50	1.2V	M, I	2.1	No	55	899.00	
	A5001	B	250	375	20-20	0.05	0.05	H					50	1.2V	I	2.1	No	55	749.00	
	DDR1200	B	250	375	20-20	0.05	0.05	H					50	1.2V	M, I	2.1	No	57	1199.00	
	PM840	B	205	300	20-20	0.05	0.05	AB					40	1.2V	I	1.5	No	23	499.00	
	PCR800	B	205	300	20-20	0.05	0.05	AB					40	1.2V	I	1.5	No	21	449.00	
	PM1600	B	375	600	20-20	0.05	0.05	AB					50	1.2V	I	1.5	No	65	1399.99	900 watts into 2 ohms.
	A2502	B	125	190	20-20	0.05	0.05	AB					40	1.2V	M, I	2.6	No	30	649.00	
	A2801	B	140	205	20-20	0.05	0.05	AB					40	1.2V	I	2.1	No	30	549.00	
SPECTRAL	DMA-50	B	80	150	0-1.5M	0.01	0.01	AB					1000	1.4V		6	No	32	2495.00	Bridgeable.
	DMA-100HC	B	100	200	0-1M	0.01	0.01	A					1000	1.4V		3	No	66	3995.00	Balanced line input.
SPECTRASCAN	BPA-101B	B	120	175	2-120	0.07	0.07	AB					40	1V		†	No	40	1195.00	†Regulated power supply.
STAX	DA-100M	B/M	100	200	10-20	0.008		A					100		I		No	33	2000.00	
STRELIOFF	DC1 400/400	B	420	730	10-30	0.25	0.15	AB					45	1.5V		1.5	No	62	2000.00	Special order.
	SC1 300	B/M	330	500	10-30	0.10	0.10	AB					45	1.5V		1.5	No	65	1500.00	As above.
	SC1 500	B/M	560	800	10-30	0.10	0.10	AB					55	1.5V		1.5	No	75	2000.00	As above.
	SC1 1000	B/M	†	††	10-30	0.10	0.10	AB					65	1.5V		1.5	No	87	2500.00	†1150 watts. ††1500 watts. As above.
	AM1 100	B/M	115	150	10-30	0.10	0.10	AB					25	1V		1.5	No	22	750.00	Special order.
SUMO	Nine	B	60	120	20-20	0.25	0.05	A					15	1V		1	No	35	799.00	Balanced outputs.
	Nine Plus	B	65	120	20-20	0.10	0.05	A					15	1V		1	No	35	999.00	As above.
	Andromeda	B	200	350	20-20	0.05	0.05	AB					20	1.8V		1.5	No	35	899.00	As above.
	Polaris	B	100	175	20-20	0.05	0.05	AB					40	1.3V		1.5	No	27	599.00	Variable bias; MOS-FET.
SUPERPHON	DM200	B	100	200	.3-150	0.05	0.05	AB					26.6				No	33	599.00	
TANDBERG	TPA 3006A	B	150		20-20	0.02	0.02	AB					500		I		No	25	1195.00	
	TPA 3009A	B/M	180	330	20-20	0.05	0.05	AB					250		I		No	25	1195.00	
	TPA 3026A	B	150	300	20-20	0.02	0.02	AB					500		I		No	32	1595.00	35 amps continuous.
	TPA 3016A	B	220	440	20-20	0.05	0.05	AB					500		I		No	62	3295.00	50 amps continuous, 100 amps peak to peak; can drive 0.5-ohm load.
	TPA 3012A	I	100		20-20	0.02	0.02	AB	78	1.9	250	Yes	250	15	I		No	22	1195.00	
TECHNICS	SE-A100	B	170	240	20-20	.0007		New A						75	M	1		69	1500.00	
	SE-A3MK2	B	300	300	20-20	0.002	0.002	New A						55	M	1		86	2200.00	
	SE-A5MK2	B	150	150	20-20	0.002	0.002	New A						90	M	1.5		40.6	800.00	
	SU-V7X	I	100	100	20-20	0.003	0.003	New A	77	0.25	150	Yes		15				24.3	460.00	
	SU-V10X	I	120	120	20-20	0.003	0.003	New A	78	0.25	150	Yes		15				29.8	600.00	
	SU-V40	I	50	50	20-20	0.003	0.007	New A	76	0.25	150	No		150				13.9	230.00	
	SU-V60	I	90	90	20-20	0.002	0.005	New A	76	0.25	160	Yes		150				18.8	345.00	

AMPLIFIERS

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Unit Type: Integrated = I, Basic = B, Tube = T, Mono = M	Cont. Average Watts/Channel into 8 Ohms		Cont. Average Watts/Channel into 4 Ohms	Power Bandwidth, Hz to kHz	Rated THD, %	Rated IHF IM, %	Class of Output Operation	MM Phono S/N, – dB, "A" Wtd. re: 5 mV	MM Phono Sensitivity, mV	Maximum MM Phono Input, mV	Moving Coil Input?	Rated Slew Rate, V/μS	High Level Sensitivity, mV	Meters = M, Peak/Clip Indicators = I	Dynamic Headroom, dB	Does Unit Invert Phase?	Weight, Lbs.	Price, $	Notes
THRESHOLD	S/500	B	250		7-100	0.1	0.1	Stasis					50				No	78½	3300.00	12 amps continuous, 100 amps peak to peak.
	S/300	B	150		7-100	0.1	0.1	Stasis					50				No	56	2400.00	As above but 10 and 80.
	S/200	B	100		7-100	0.1	0.1	Stasis					50				No	44	1590.00	As above but 8 and 40.
	SA/1	B/M	160		7-100	0.05	0.05	Stasis, Class A					50		M		No	78½	3750.00	As above but 40 and 150.
	SA/2	B/M	100		7-100	0.05	0.05	Stasis, Class A					50				No	56	2500.00	As above but 30 and 100.
	SA/3	B	50		7-100	0.05	0.05	Stasis, Class A					50				No	56	2500.00	As above but 16 and 80.
VECTOR RESEARCH	VA-1400	I	60	100	20-20	0.03	0.03	AB	80	2.5		Yes		150	M, I	2.5		20	329.95	
	VA-1100	I	40	60	20-20	0.03	0.03	AB	80	2.5		Yes		150	M, I	2.5		13	249.95	
	VA-1450	B	60	100	20-20	0.03	0.03	AB								2.5		20	329.95	
VSP LABS	TransMos 150	B	150	200	20-20	0.05	0.05	AB					70	1.8V		3	No	42	1050.00	Transconductance MOS-FET.
	Gold Edition	B	200	300	20-20	0.05	0.05	AB					70	2V		1.6	No	57	1500.00	As above.
WINGATE AUDIO	2000A	B	100	200	.06-250	0.5	0.5	A					100			1.2	No	95	3200.00	No negative feedback; dual mono; MOS-FET.
	2000M	B/M	200	400	.06-250	0.5	0.5	A					100			1.2	No	95	3500.00	No negative feedback; MOS-FET.
YAMAHA	B-2X	B	170	240	10-100	0.002	0.002	A/AB						1.3V		1.9		57⅛	1500.00	
	M-85	B	260	330	10-60	0.003	0.003	A/AB						1.6V	M, I	2.2		50⅝	990.00	
	M-65	B	170	230	10-60	0.003	0.003	A/AB						1.3V	M, I	1.8		33	699.00	
	M-45	B	125	180	10-60	0.003	0.003	A/AB						1.1V	M, I	1.3		30⅞	429.00	
	M-35	B	40		10-50	0.008								1V		1.5		11	249.00	20 watts x 4 into 8 ohms.
	A1020	I	125		10-50	0.005	0.002	A/AB	94	2.5	170	Yes		150		1.4		25⅜	599.00	
	A720	I	105		10-50	0.005	0.002	A/AB	92	2.5	170	Yes		150		1.4		22½	469.00	
	A520	I	75		10-50	0.005	0.005	AB	90	2.5		Yes		150				16½	329.00	
	A420	I	50		10-50	0.007	0.005	AB	90	2.5		Yes		150				13	229.00	

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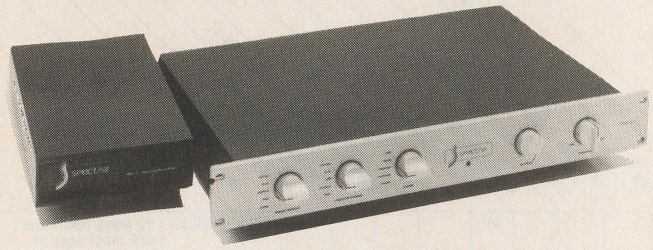
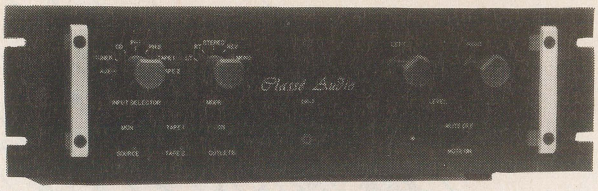
PREAMPLIFIERS



SPECTRAL DMC-6



CLASSÉ AUDIO DR-7

AUDIO RESEARCH SP-10

KRELL KRS-1A

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Unit Type: Tube = T, Mono = M, Phono Stage Only = P, Moving Coil Stage Only = MC	Frequency Response, Hz to kHz, ±dB	Maximum Output, V	THD, %	IHF IM Distortion, %	Number of Tape & Processor Loops	MM Phono Sensitivity, mV, for 0.5 V Output at 1 kHz	MM Phono Overload, mV	MM Phono S/N, –dB, "A" Wtd. re: 5 mV	MC Phono S/N, –dB, "A" Wtd. re: 0.5 mV	High Level Sensitivity, mV	Number of Tone Controls	MM Phono Input Capacitance, pF	MM Phono Input Impedance, Ohms	Moving Coil Input?	Does Unit Invert Phase?	Price, $	Notes
ACCUPHASE	C-222		1-500 +0,-3	2	0.005		2	0.5	300	85	78	31.5	0		47k	Yes	No	1850.00	
	C-200L		1-500 +0,-3	2	0.005		3	0.5	300	82	76	31.5	4		47k	Yes	No	2750.00	
	C-270		1-500 +0,-3	2	0.005		2	0.5	300	82	76	31.5	0		47k	Yes	No	4500.00	
	C-280		1-500 +0,-3	2	0.005		2	0.5	300	82	76	31.5	0		47k	Yes	No	5200.00	
ACOUSTAT	TNP		2-250 +0,-3	16	0.01	0.01	3	3.5	240	90	80	250	0	Sel.	47k	Yes	No	749.00	
ADCOM	GFP-555		20-20 ±0.1	10	0.005	.0015	3	0.4		85	70	40	2	Var.	47k	Yes		499.95	
	GTP-500(RI)		20-20 ±0.2	10	0.009	.0015	2	0.4				40	2		47k	No		499.95	Tuner/preamp; see also "Tuners"; optional remote sensor, $90.00.
AGI	511A		20-20 ±0.1	9.5	0.005	0.005	3	1.3	160	82		230	0	Sel.	Sel.	No	No	650.00	
	511AH		20-20 ±0.1	9.5	0.005	0.005	3	0.56	70	82		230	3	Sel.	Sel.	No	No	650.00	
	511AM		20-20 ±0.1	9.5	0.005	0.005	3				77	230	0	Sel.	Sel.	Yes	No	740.00	
APT	HP		20-20 ±0.5	10	0.006	0.006	3	1.25	180	76	85	320	2	Sel.	Sel.	Opt.	No	680.00	Infrasonic filter; dedicated phono balance; discrete phono section.
	P2		20-20 ±0.5	10	0.006	0.006	1	1.25	180	76	85	320	2	Sel.	47k	Yes	No	450.00	Dedicated phono balance; discrete phono section.
	P205	P	30-15 ±0.2	24	0.006	0.006		1.25	180	76	85		4	Sel.	Sel.	Opt.	No	450.00	Balanced output; separate L & R level and high-frequency controls; infrasonic filter; discrete phono section.
AR	C-06		20-20 +0,-0.5	8	0.005	0.005	2	0.8	200	83	72	50	3	Sel.	47k	Yes	No	360.00	
AUDIBLE ILLUSIONS	Modulus 2A	T	10-100 ±3	80	0.02	0.02	1	0.5	1.2V	75		50		40	47k		Yes	749.00	
	Saturn 1	T	5-200 ±3	120	0.02	0.02	2	0.5	600	85	88	50		Adj.	Adj.	Yes	Adj.	2495.00	
AUDIO DESIGN ASSOCIATES	DSP8/ASU10 (RO)		5-50 ±3	7.5	0.007	0.05	4					50	3				No	1845.00	Includes separate automatic a.c. switching controller.
	PP-1200	P	5-20	7.5	0.005	0.05		5.1	77	70	70			47	47k	Yes	No	300.00	

The new
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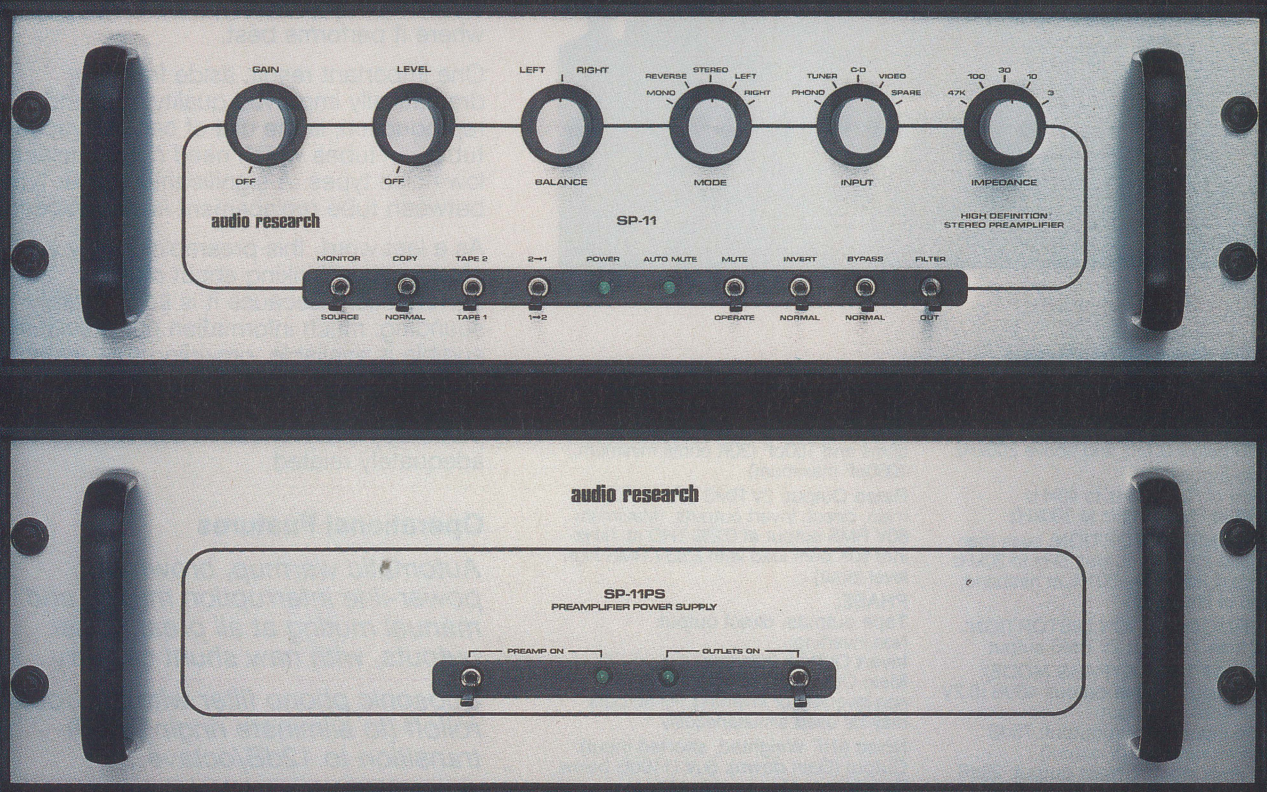

SP11
STEREO PREAMPLIFIER

One year ago, in October of 1985, Audio Research Corporation introduced the SP11 Preamplifier. During this time, our introductory claim of "a new reference standard" has been confirmed by reviewer after reviewer throughout the Free World. It is improbable that any audio product, including previous Audio Research products, has ever received such unanimous acclaim. We believe that once you hear the SP11 reproduce music, you will find that acclaim justified.

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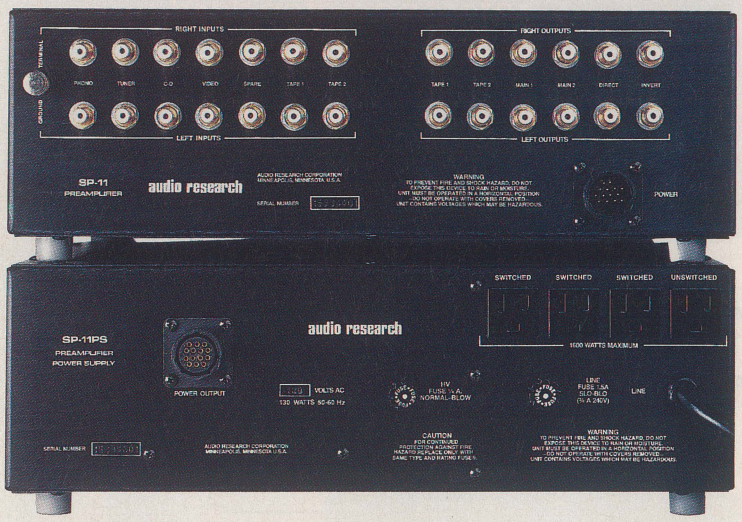
SP11



STEREO PREAMPLIFIER

The SP11 is a hybrid unit, utilizing both vacuum tubes and Field Effect Transistors (FETs). It is not intended that this product should somehow continue the controversy of "vacuum tubes" vs. "solid-state." Rather, in keeping with Audio Research's design philosophy of advancing the state-of-the-art, each type of device is used where it performs best.

One important result, aside from the dramatically improved quality of sound reproduction, is the use of only six vacuum tubes — tubes which need not be selected low-noise types. A significantly longer time between tube replacement is also expected.

As a last word, this preamplifier may well change your thinking about music reproduction. Because it is so incredibly "open" sounding, much information not previously audible is available, providing new insight and enjoyment from many sound sources. To be appreciated, the SP11 Preamplifier must be personally experienced; it cannot otherwise be adequately related.

SP11 Specifications

FREQUENCY RESPONSE:
High level input:
± 1dB, 0.2Hz to 100 kHz
— 3dB below 0.1Hz and above 200kHz
Phono input:
± .2dB of RIAA 20Hz to 40kHz
± 1dB of RIAA, 1.0Hz to 100kHz

HARMONIC DISTORTION: Less than .005% at 2V RMS output, 5Hz to 20kHz (Typically less than .001% at midband, phono or line input)

INTERMODULATION DISTORTION: Less than .003% at 2V RMS output

GAIN: (AT 1kHz, BYPASS MODE):
Phono input to tape output: 46dB (0.2V output from 1mv input)
Phono input to main output: 75dB (0.175mv input for 1V output)
High level input to main output: 29dB (36mv input for 1V output)

INPUTS (7): Phono, Tuner, C-D, Video, Spare, Tape 1, Tape 2

OUTPUTS (6): Tape 1, Tape 2, Main 1, Main 2, Direct, Invert

FILTER: 25Hz Hi-pass phono subsonic 6dB/octave rolloff (to eliminate ringing) with transition to 12dB/octave at 10Hz. Front panel switchable, phono only

CONTROLS (6): Gain, Level (to set gain range), Balance, Mode, Input, Impedance

SWITCHES (8): Tape Monitor, Copy, Tape 1/2, Tape 1 to 2/2 to 1, Mute, Invert Phase, Bypass, Filter

INPUT IMPEDANCE:
Phono: Front panel selectable 47K, 100, 30, 10, 3 ohms
Phono Input Capacitance: 150pF at 10kHz
High Level: 20K ohms or higher, depending on switch functions

MAXIMUM INPUT LEVEL UNDISTORTED:
Phono: 350mV RMS at 1kHz, 1200mV RMS at 10kHz (0.1 second maximum duration, 6dB less if continuous)
High Level: 25 Volts RMS

OUTPUT IMPEDANCE: 250 ohms main, direct, invert outputs. 500 ohms tape output. Recommended load 60K ohms and 100pF (20K ohms minimum, 1000pF maximum)

Rated Output: 2V RMS 1Hz to 100kHz main, direct, invert outputs. (Maximum 80V RMS output at 0.2% THD at 1kHz into 60K ohm load with 2.85V RMS high level input)

PHASE:
Tape outputs, direct output: Non-inverting
Invert Output: Inverting
Main Outputs (2): Selectable non-inverting or inverting. All outputs may be used simultaneously.

Noise (IHF Weighted, shorted input):
Output (Gain down): 6uV (110dB below Rated Output)
Input (High Level): 3uV equivalent input (110dB below IV input)
Phono: 0.15uV equivalent input (76dB below 1mV input)

Tube Complement (Hybrid FET/Tube Audio Circuit, Solid-State Power Supply): 6 — 6DJ8/ECC88

Power Requirements: 95-135VAC 60Hz (Export 190-270VAC 50/60Hz) 130 Watts maximum

Dimensions: (Each Chassis, EIA Rack Panel Mounting)
19″ (48 cm) W x 5¼″ (13.4 cm) H x 10¼″ (26 cm) D
Handles extend 1⅝″ (4.1 cm) forward of panel. Interconnect cable extends 4″ behind rear of chassis.

Weight: (2 Cartons)
SP11: Net 14 lbs. (6.4 kg); Shipping 23 lbs. (10.5 kg)
SP11PS: Net 15 lbs. (6.8 kg); Shipping 23 lbs. (10.5 kg)
TOTAL: Net 29 lbs. (13.2 kg); Shipping 46 lbs. (21.0 kg)

Operational Features

Automatic warmup, brown-out, power-line interruption muting and manual muting at all preamplifier outputs, with new shunt circuitry.

Subsonic phono filter with 6dB/octave rolloff (to eliminate ringing) with transition to 12dB/octave.

Bypass switch for use with "audiophile quality" program material.

Absolute phase switch for main outputs, plus unswitched inverting and non-inverting outputs.

Full tape functions: two inputs, two recording outputs, plus tape copy and tape monitor functions.

Input/output connectors have heavy gold plating and connect "ground" before "hot".

Level set control in addition to normal gain control. Allows essentially unlimited input signal range while preserving optimum gain control usage.

Toroid power transformer for low mechanical noise and low external magnetic field.

To audition the SP11 Preamplifier, visit your authorized Audio Research dealer. Black front panels available at additional cost. Call or write for literature on the complete line of Audio Research products.

audio research corporation
6801 Shingle Creek Parkway
Minneapolis, Minnesota 55430
Area Code 612/566-7570
Telex: 290-583

PREAMPLIFIERS

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Unit Type: Tube = T, Mono = M, Phono Stage Only = P, Moving Coil Stage Only = MC	Frequency Response, Hz to kHz, ±dB	Maximum Output, V	THD, %	IHF IM Distortion, %	Number of Tape & Processor Loops	MM Phono Sensitivity, mV, for 0.5 V Output at 1 kHz	MM Phono Overload, mV	MM Phono S/N, −dB, "A" Wtd. re: 5 mV	MC Phono S/N, −dB, "A" Wtd. re: 0.5 mV	High Level Sensitivity, mV	Number of Tone Controls	MM Phono Input Capacitance, pF	MM Phono Input Impedance, Ohms	Moving Coil Input?	Does Unit Invert Phase?	Price, $	Notes
AUDIO INTERFACE	CST-80/II	MC	20-95 +0,-1	1	0.005	0.01					100					Yes	No	400.00	Transformer.
	CSA-50	MC	1.2-540 +0,-3	4.2	0.008	0.008					60					Yes	No	250.00	Battery-operated.
	CSA-50/II	MC	1.2-540 +0,-3	4.7	0.008	0.008					60					Yes	No	300.00	
AUDIOLAB	8000C		20-20 ±0.5	7.7	0.01	0.01	2	1.5	175	79	75	100	2	85	47k	Yes	No	595.00	Class A; defeatable tone controls.
AUDIO PRO	SCA-1		30-50 ±0.2	4	0.02	0.02	3	Adj.		90	80	140	0	Var.	Var.	Yes		875.00	
AUDIO RESEARCH	MCP-2	MC	0-400 +0,-3	1.5	0.005	0.01					72					Yes	No	1395.00	Selectable MC gain and impedance.
	MCP-33	T/MC	10-250 +0,-3	10	0.005	0.01					65					Yes	No	1395.00	As above.
	SP-7		0.1-400 +0,-3	14	0.002	0.002	1	0.5	500	74		25	0	30	50k	No	No	995.00	
	SP-8	T	1-100 +0,-3	60	0.01	0.002	1	0.5	900	74		25	0	40	50k	No	No	1895.00	Auto and manual mute.
	SP-10	T	1-100 +0,-3	60	0.01	0.002	1	0.13	300	85	65	25	0	40	50k	Yes	No	3700.00	Selectable MC impedance; dual chassis.
	SP-11		0.1-200 +0,-3	80	0.002	0.002	2	0.088	350	90	70	18	0	150	47k	Yes	Sel.	4900.00	Gain and level controls, bypass switch, hybrid, dual chassis.
	SP-12RM	T	1-70 +0,-3	50	0.02	0.07	1	0.8	600	72		50	0	40	50k	No	No	1195.00	
AUDIO SERVICES	Trans Valve	T	10-250 +0,-0.5	45	0.006	0.006	1				86		0			Opt.	No	1995.00	Optional moving-coil stage, $800.00.
AUDIRE	Diffet 2		0-100 +0,-0.25	18	0.005	0.001	2	1.00	285	86	72	100		100	47k	Yes	Var.	855.00	Selectable MC impedance.
	Legato		0-100 +0,-0.25	10	0.005	0.001	2	1.00	150	75		100		170	47k	No		410.00	
A.V.A.	Super PAS Two	T	20-20 ±0.1	7	0.1	0.1	1	0.5	150	70		50	0	10	47k	No	No	500.00	Installs in Dynaco PAS-3X, $300.00.
	Super FET Two		20-20 ±0.1	12	0.001	0.001	3	0.5	150	78		50	4	10	47k	No	No	510.00	Installs in Dynaco PAT-5, $395.00.
	Tran-scendence Series Two		20-20 ±0.1	12	0.001	0.001	3	0.5	150	80		50	4	10	47k	No	No	710.00	Installs in Dynaco and Hafler chassis.
BEARD AUDIO	CA506	T	3-90 ±1	80	0.05			Sel.		77	71		0		47k	Yes	No	2900.00	
BEDINI ELECTRONICS	66		20-150 ±3	10	0.015		2		500	98		155	0	47		No		580.00	
DAVID BERNING CO.	TF-10A	T	10-100 +0,-1	8	0.5		2	1.5	200	70		150	0	45	47k	No	No	1845.00	
	TF-10AH	T	10-100 +0,-1	8	0.5		2	1.5	200	70	60	150	0	45	47k	Yes	No	2095.00	
	TF-12(RI)	T	5-100 +0,-1	4	0.5		1	0.15	200	80	60	30	0	40	47k	Yes	No	2500.00	
B & K	PRO-5		5-100 ±1	7	0.01	0.01	2	0.7	105	87		636	2	100	47k	Yes	No	330.00	
	PRO-10		5-100 ±1	7	0.01	0.01	1	0.5	100	89		450		100	47k		No	550.00	
	PRO-10MC		5-100 ±1	7	0.01	0.01	1	0.5	100	89	76	450		100	47k	Yes	No	595.00	
BOULDER AMPLIFIERS	MM Preamp		20-20 ±0.03	12	0.002		2	0.5	600	93			0	Var.	Var.	No	Sel.	990.00	
	MM/MC Preamp		20-20 ±0.03	12	0.006		2	0.5	600	93	91		0	Var.	Var.	Yes	Sel.	1290.00	
BRITISH FIDELITY	Pre Amp II												0			Yes		450.00	
	P-172												2			Yes		650.00	
	MVT												0			Yes		1600.00	
BRYSTON	.5B		20-20 ±0.1	15	0.005	0.005	1	0.5	200	84		50	0	Sel.	50k	No	Yes	600.00	
	11B		20-20 ±0.1	15	0.005	0.005	2	0.5	200	84		50	0	Sel.	50k	No	Yes	1100.00	Five high-level inputs; headphone jack; remote out.
	12B		20-20 ±0.1	15	0.005	0.005	2	0.5	200	84	83	50	0	Sel.	50k	Yes	Yes	1500.00	As above.
	TF-1	MC	5-30 ±0.5		0.005	0.005					83		0			Yes	No	450.00	
B & W	John Bowers Active Control Unit				0.01	0.01	1	3	45	85		150	0			Yes	No	699.00	
	CU810				0.005	0.005	2	5.14	150	108		90.4	0			Yes	No	2150.00	
CANTON	EC-P1		7-2M	12	0.002	0.002	3	2		98	84	200	0			Yes		2000.00	
CARVER	4000t		1-60 +0,-3	7	0.05	0.003	3	1.5	100	89	89		4	Sel.	47k	Yes	No	1199.00	Includes Sonic Hologram Generator.
	C-1		1-60 +0,-3	7	0.04	0.04	3	1.5	100	82	86		4	Sel.	47k	Yes	No	599.00	As above.
	C-2		1-60 +0,-3	7	0.05	0.04	3	1.5	100	83	77		2	Sel.	47k	Yes	No	399.00	
CASCADE	SNP-2a	MC	2-150 +0,-1.5	0.6	0.03	0.025					84					Yes	No	355.00	
CELLO	Audio Suite												0				No		Modular system; $4950.00 base price; specs provided on request.

PREAMPLIFIERS

MANUFACTURER	Model (RI)=Remote Included, (RO)=Remote Optional	Unit Type: Tube=T, Mono=M, Phono Stage Only=P, Moving Coil Stage Only=MC	Frequency Response, Hz to kHz, ±dB	Maximum Output, V	THD, %	IHF IM Distortion, %	Number of Tape & Processor Loops	MM Phono Sensitivity, mV, for 0.5 V Output at 1 kHz	MM Phono Overload, mV	MM Phono S/N, –dB, "A" Wtd. re: 5 mV	MC Phono S/N, –dB, "A" Wtd. re: 0.5 mV	High Level Sensitivity, mV	Number of Tone Controls	MM Phono Input Capacitance, pF	MM Phono Input Impedance, Ohms	Moving Coil Input?	Does Unit Invert Phase?	Price, $	Notes
CLASSÉ AUDIO	DR-7						2							Adj.	Adj.	Yes	No	3495.00	
	NIL-2	MC	0.3-150	0.5							80					Yes	No	1195.00	
CLEARAUDIO	Harmony	MC	0-1M +0,-3	8	0.01	0.01	1				70	200	0			Yes	No	1500.00	Mounts directly onto cartridge; weight, 7 grams.
CONRAD-JOHNSON	PV7	T	20-100 +0,-1	25	0.1	0.1	2	0.65	500	72		65	0	150	47k	No	Yes	695.00	
	PV5	T	20-100 +0,-1	25	0.05	0.05	2	0.15	500	72		20	0	150	47k	No	No	1485.00	
	Premier 3	T	20-100 +0,-1	25	0.05	0.05	2	0.20	500	72		20	0	150	47k	No	No	2950.00	
	HV2	T/MC	20-100 +0,-1	10	0.05	0.05										Yes	Yes	585.00	
	Premier 6	T/MC	20-100 +0,-1	10	0.05	0.05										Yes	Yes	985.00	
CONTINUUM ELECTRONICS	CA-1	MC	10-100 ±1	5	0.05	0.03					82					Yes	No	450.00	Has RIAA; selectable input loading.
CONVERGENT	SL-1	T	0.1-600 ±1.5	60	.0005	.0005	1	0.12	250	90	70	25	0	Adj.	Adj.	Yes	No	3495.00	External power supply; switched-resistor balance and volume.
MITCHELL A. COTTER	MK-3L	MC	2-40 +0,-1		0.001	0.001										Yes	No	900.00	Shielded transformer for 1 to 10-ohm source resistance.
	MK-3K	MC	2-40 +0,-2		0.001	0.001										Yes	No	900.00	As above but for 10 to 100-ohm sources.
	PSC-3	P	2-40 +0,-1	9	0.002	0.001		20	300	96				40	500k	No	No	1000.00	Requires PW-2B power supply.
	CM-3		2-40 +0,-0.5	9	0.001	0.001	2					35	0			No	No	3300.00	High-level line inputs.
	NFB-3		15-40 +0,-3	9	0.001	0.001											No	900.00	Requires PW-2B power supply.
	SYD-3		2-40	9	0.002	0.002	2	1.5	300	96		35	0	40	500k	Yes	No	8500.00 Sys.	Cabinet-enclosed modular system.
COUNTERPOINT	SA-9	T/P	1-350	100	0.1	0.12		2.5	1V					180	47.5k	Yes	No	1995.00	External power supply.
	SA-11(RO)	T	1.6-200	100	0.05	0.07	3					40					Sel.	3995.00	Motor-driven potentiometers; system of Models SA-9 and SA-11, $5990.00.
	SA-2	T/MC	0.5-350	38												Yes	Yes	995.00	External transformer.
	SA-3.1	T	2.5-30 ±0.1	70	0.18	0.18	1	2.5	800	80				Var.	Var.	Yes	Yes	995.00	As above; auto-mute.
	SA-5.1	T	0.5-88 ±0.1	70	0.08	0.08	1	0.5	700	86				Var.	Var.	Yes	Yes	1795.00	Exernal power supply; auto-mute.
	SA-6	T/MC	1-30	30	0.06	0.07										Yes	Yes	450.00	External transformer.
	SA-7.1	T	2-30 ±0.1	30	0.25	0.3	1	0.8	500					180	47k	Yes	Yes	595.00	Auto-mute.
CROWN INTERNATIONAL	PSL-2		10-50 ±0.25	2.5	0.009	.0025	2	6.6	330	87		250	2	50	47k	No		595.00	
DAYTON WRIGHT	SPA Mk 1b		0.55-290 ±1	8	0.001	0.001	2	0.2	160	82	76	15		38	47k	Yes	Yes	1980.00	
	SPD Mk 1		1-400 ±1	8	0.001	0.001	2	0.2	160	85	79	15		38	47k	Yes	Yes	4500.00	Dual mono.
	DW-536	MC	9-300 ±1.5	1.5		0.004					77					Yes	No	482.00	
	DW-999	MC	5-800 ±1	2	0.001	0.001					81					Yes	No	1300.00	As above.
DB SYSTEMS	DB-1B/DB-2A		20-20 ±0.04	9	.0008	0.001	1	0.9	150	77		120		100	47k	No	Var.	650.00	External power supply.
	DB-1A/DB-2A		20-20 ±0.04	9	.0008	0.001	1	0.9	150	77		120		100	47k	No	Var.	495.00	As above.
	DBR-15B/DB-2A		20-20 ±0.04	10	.0008	0.001	1	0.9	150	77		120	6	100	47k	No	Var.	1085.00	As above; without oak cabinet, $935.00.
	DB-4B	MC	10-100 ±0.1	2	.0008	0.001					80					Yes	No	205.00	Model DB-2A power supply or DBP-1 cable required.
	DB-1A-HL/DB-2A		10-50 ±0.1	9	.0006	.0008	1					120				No	Var.	375.00	Five high-level inputs; no phono section.
	DB-1B-HL/DB-2A		10-50 ±0.1	9	.0006	.0008	1					120				No	Var.	530.00	As above.
DEFINITIVE AUDIO	Little Black Box	T	7-25 +0,-1	5	0.15		2					400	0				Yes	459.00	
	S.S.2	T	20-125 ±0.7	4	0.5		1	7	400	74	63			10	47k	Yes	Yes	2395.00	
	S.S.2S	T/MC	15-140 ±0.4													Yes		695.00	Selectable impedance.
	S.S.1	T/MC	15-65 ±0.5													Yes		199.00	
	Adapter	T/P						7	400					100	47k			299.00	
DENNESEN	Sirius		5-100 ±0.1	10	0.01	0.01	2	2	200	80		125	0	100	47k	No	No	489.00	
	JC80	M	1-2M ±0.1	20	0.005	0.005	2	2	500	100	80	100	0	100	Adj.	Yes	Adj.	4000.00 Pair	External power supply.
DENON	PRA-1100		10-100 ±0.2	10	0.001	0.003	3	2.5	160	96	79	150	3		470	Yes		425.00	Unity gain interface; variable loudness.
	PRA-2000Z-BK		10-100 +0,-0.3	12	.0015	0.001	2	2.5	500	90	80	150	2		500	Yes		1600.00	As above.
EIDOLON RESEARCH	Julia	T	0.1-200 +0,-1.5	85	0.01	0.01	2	1.45	500	79	65	Sel.	0	Adj.	Adj.	Yes	Var.	3600.00	Dual mono.
	Mentat	T	0.5-150 +0,-1.5	85	0.01	0.01	2	1.45	550	78	65	Sel.	0	Adj.	Adj.	Yes	Var.	2400.00	External power supply.
	Salesia	T	0.5-150 +0,-1.5	70	0.01	0.01	2	1.45	550	78	65	Sel.	0	Adj.	Adj.	Yes	Yes	1200.00	Passive and active RIAA.
ELECTRO-COMPANIET	PRE II		5-100 ±0.5	15	0.004		2	1.5	200	84	80	100	0	150	47k	No	No	1550.00	
	EZ-1		5-100 ±0.5	15	0.002		2	1.5	250	84	80	100	0†	150	47k	Yes	†	2025.00	†Inverts phase only in MC stage.

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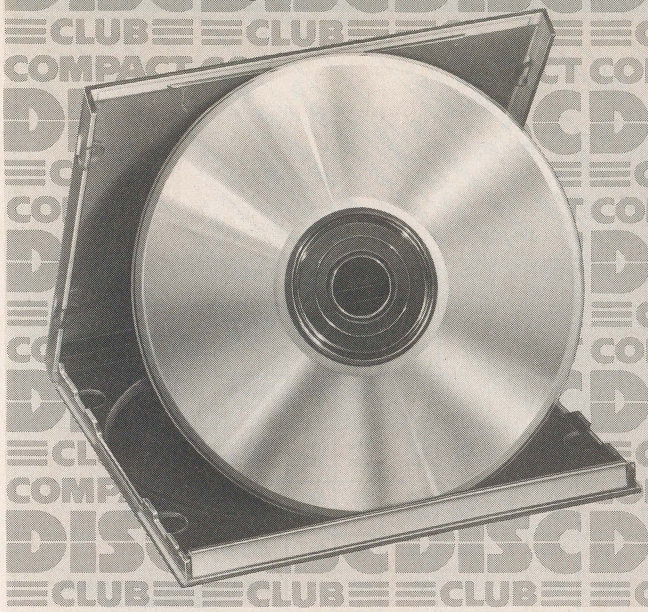

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Dvořák, Symphony No. 9 (New World) • Chicago Symphony Orchestra/Solti. London *DIGITAL* 115168

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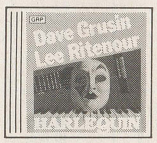

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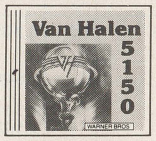

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PREAMPLIFIERS

MANUFACTURER	Model (RI)=Remote Included, (RO)=Remote Optional	Unit Type: Tube=T, Mono=M, Phono Stage Only=P, Moving Coil Stage Only=MC	Frequency Response, Hz to kHz, ±dB	Maximum Output, V	THD, %	IHF IM Distortion, %	Number of Tape & Processor Loops	MM Phono Sensitivity, mV, for 0.5 V Output at 1 kHz	MM Phono Overload, mV	MM Phono S/N, −dB, "A" Wtd. re: 5 mV	MC Phono S/N, −dB, "A" Wtd. re: 0.5 mV	High Level Sensitivity, mV	Number of Tone Controls	MM Phono Input Capacitance, pF	MM Phono Input Impedance, Ohms	Moving Coil Input?	Does Unit Invert Phase?	Price, $	Notes
ELECTRON KINETICS	Eagle 2000		0.1-150	59	0.1	0.1		0.8	220	90	90	100	0	47	47k	Yes	No	1598.00	
ESOTERIC AUDIO RESEARCH	802 Head	T MC	5-80 +0,-1	10	0.03	0.05	2		250	90			0			No Yes	No No	1299.95 700.00	Transformer; three pairs of RCA inputs.
GORDON INSTRUMENTS	Gordon (RI)		20-20 ±0.1	5			1†					100	0			Yes	No	2400.00	†Input/output option, $520.00.
GSI	5TP 3TP	T T	10-300 ±3 10-300 ±3	50 30	0.003 0.01	0.004 0.01	1 1		750 500	80 82	75 70	800 800		100 100	47k 47k	Yes Yes	No Yes	1095.00 695.00	74-dB gain. As above.
DAVID HAFLER CO.	DH-110 DH-100		20-20 +0,-0.1 20-20 ±0.25	14 8	0.001 0.005		3 1	1.25 1.2	300 180	87 87		50 50	2 2	Adj. 130	47k 47k	No No	No No	440.00 225.00	Kit, $360.00. Kit, $175.00.
HARMAN/KARDON	825		0.1-180 ±3	8	0.006		2	1.1	220	83	80	135	2	Sel.	47k	Yes	No	550.00	
HEYBROOK	C-2		10-50 +0,-1	10	0.01	0.01	1	2.6		85	80	160	0	100	50k	Yes		698.00	Optional interconnects, $59.95 per pair.
HITACHI	HCA8500II		5-20				2	2.5		90	75		2		47k	Yes	No	370.00	
JADIS	JP-80	T		39			1	5					0		47k			6400.00	
JANIS	CPA-100 PPA-202	 MC	1-200 +0,-3 0.05-1.5M +0,-3	12 1	0.01 0.01	0.01 0.01	1	2.5	300	75	 73	98		40	44k	Opt. Yes	Sel. No	1995.00 300.00	Plug-in for above model.
JORDAN	Preamplifier One		14-150	10	0.01	0.01	1	Adj.	200	72	72	100	0	Adj.	47k	Yes	No	875.00	External power supply.
JRM	Preamp		5-50 +0,-1	10	0.01	0.01	2	1.25		81		Sel.	Opt.	Sel.	Sel.	Opt.	No	450.00	Includes 10 watt/channel headphone amp; video inputs, subsonic filter.
KENWOOD	KC-105(RO) Basic-C1 Basic-C2		5-200 +0,-3 1-250 +0,-3 1-350 +0,-3		0.003 0.002 0.005		2 2 2	2.5 2.5 2.5	95 200 200	86 87 88	 70 70		7 2 2	 250 250		No Yes Yes	No No No	180.00 225.00 295.00	Built-in seven-band EQ.
KINERGETICS	KPA-1		1-300 +0,-3	7.5	0.05	0.05	2	0.3	20	77	73	150	0	Var.	Var.	Yes	Sel.	775.00	Dual mono.
KLYNE AUDIO ARTS	SK-2A	MC	0.8-350 +0,-1	3	0.005	0.005					72					Yes	No	750.00	Switchable high-frequency contour and input impedance.
	SK-4		0.5-250 +0,-3	10	0.005	0.005	0	5	100	85	72	Adj.		Adj.	Adj.	Yes	No	2295.00	Straight line version of SK-5; line amps optional.
	SK-5		0.5-250 +0,-3	10	0.005	0.005	1	5	100	85	72	Adj.		Adj.	Adj.	Yes	Var.	2995.00	Dual mono.
	SK-6		0.5-250 +0,-3	10	0.005	0.005	2	5	100	85	72			Adj.	Adj.	Yes	No	1695.00	Optional phono amplifier.
KRELL	PAM-5		0.05-1M	10	0.001	0.001	1		300	107	87	100		100	47k	Yes	No	1550.00	External power supply; CD filter.
	PAM-3		0.01-1.5M	10	0.001	0.001	2		500	110	90	100		100	47k	Yes	No	2850.00	Dual mono; CD filter.
	KRS-2		0-1.5M	15	0.001	0.001	2		800	110	90	100		200	47k	Yes	No	4500.00	D.c.-coupled; four transformers.
	KRS-1A	M					2								47k	Yes	No	7500.00	Four chassis; d.c.-coupled.
	KRS Balanced						2								47k	Yes	No	9000.00	Differential input to output.
KYOCERA	C-910		0-200 +0,-3	25	0.003	0.003	2	0.55	300	85	76	125	2	100	47k	Yes	No	1200.00	
LAZARUS ELECTRONICS		T MC	20-20 +0,-1 20-100 +0,-1	50	0.05		1	1.58	150	75	 60	50	0		47k	No Yes	Yes	599.00	28-dB gain.
MARK LEVINSON	ML-12A						1						0	Sel.	47k	Yes	No	1525.00	External power supply, PLS-124, $435.00.
	ML-10A						1						0	Sel.	47k	Yes	No	3150.00	
	ML-7A						2						0	Sel.	47k	Yes	No	5750.00	
	ML-6B	M					1						0	Sel.	47k	Yes	No	3660.00	
LINEAGE	CP100		2-200 +0,-1	15	0.01	0.01	2					300	2			Yes	Sel.	1650.00	External power supply.
LINN	LK1(RO)						2	5				200	0		47k	Yes	Yes	695.00	
LOGAN LABS	PA-10B	T/P	1-3M ±1.5	160	0.2			3	1V	72				12	47k		Yes	5495.00	External power supply.
	HLE-1010T	T/MC	1-1M ±1.5	50	0.2						80					Yes	Yes	2695.00	As above; pre-preamp for above model.
	PA-101		1-1M ±1.5	120	0.2		1				80	300				Yes	Yes	2395.00	Tube/FET hybrid; separate transformer.
LSR&D	The Leach Pre-Preamp	MC	0.2-200 +0,-3	4	0.005	0.005					88	160				Yes	No	170.00	Kit, $100.00; selectable input impedance.
LUXMAN	LE-109		20-20 ±0.3	6	0.005			2.5	130	103	87				47k	Yes			
	C02		10-100 +0,-1	18	0.005	0.007	2	2.5	270	90	77	150	2		47k	Yes		600.00	
	C05		2-100 +0,-0.5	18	0.005	0.006	2	2.5	285	90	80	150	0		47k	Yes		2200.00	
	T407/T107 (R1)		15-40 +0,-1		0.18		1					150	0					750.00	Video inputs; includes MTS TV tuner.
	U100(R1)		10-100 +0,-3		0.05		2					150	0					350.00	

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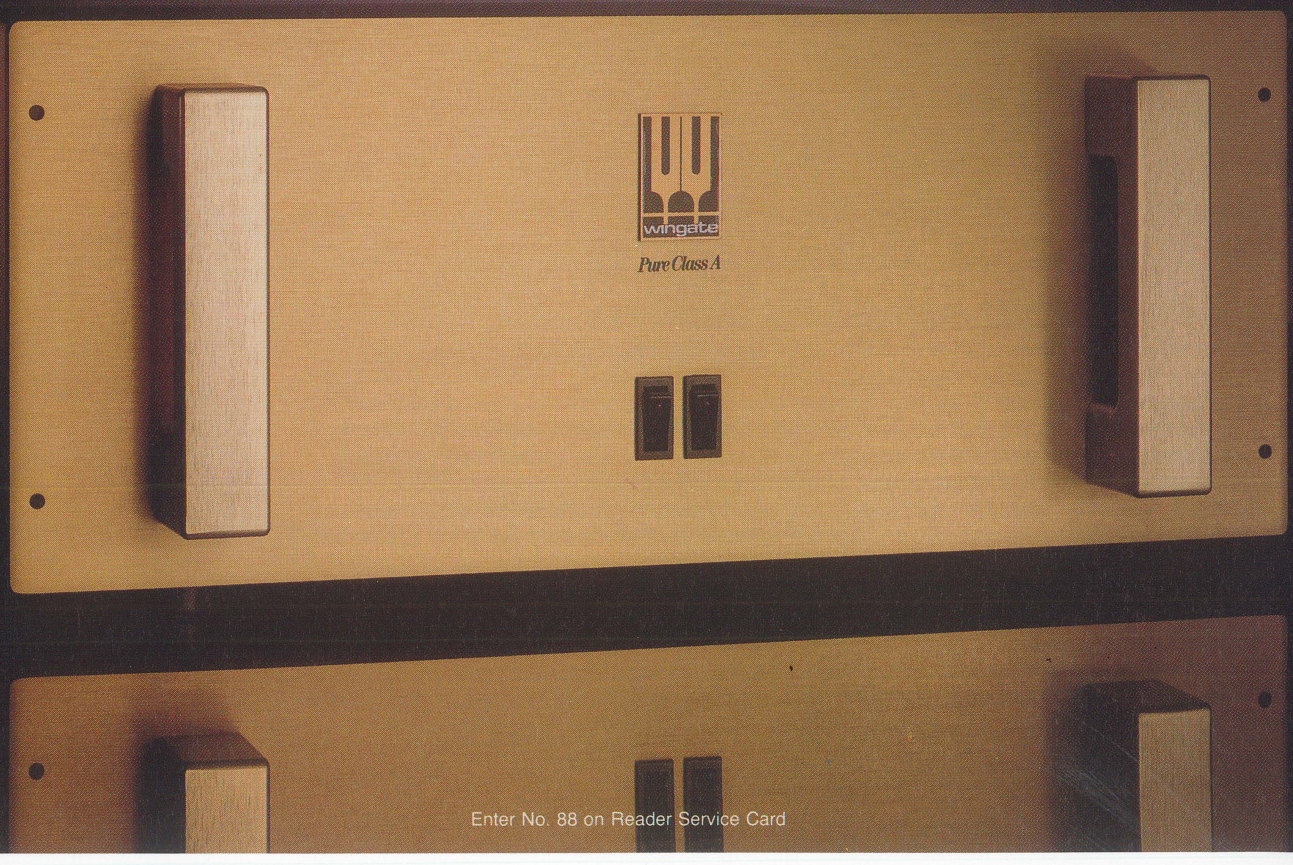

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PREAMPLIFIERS

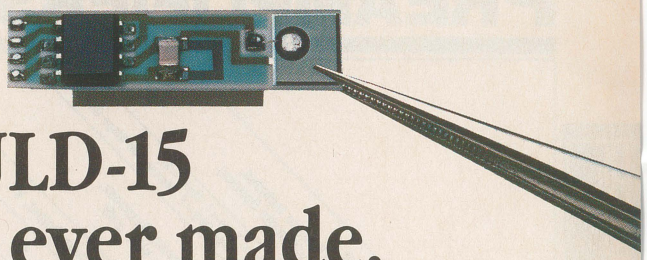
MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Unit Type: Tube = T, Mono = M, Phono Stage Only = P, Moving Coil Stage Only = MC	Frequency Response, Hz to kHz, ±dB	Maximum Output, V	THD, %	IHF IM Distortion, %	Number of Tape & Processor Loops	MM Phono Sensitivity, mV, for 0.5 V Output at 1 kHz	MM Phono Overload, mV	MM Phono S/N, −dB, "A" Wtd. re: 5 mV	MC Phono S/N, −dB, "A" Wtd. re: 0.5 mV	High Level Sensitivity, mV	Number of Tone Controls	MM Phono Input Capacitance, pF	MM Phono Input Impedance, Ohms	Moving Coil Input?	Does Unit Invert Phase?	Price, $	Notes
MAN	MPA-1		0-180 +0,-0.1			1				100					No	No	2490.00	Dual mono.
MAVRICK AUDIO	Spatial II		2-200 ±0.5	10		2		300	100		0		47k	No	No	4000.00	External power supply.
	Spatial IIM		2-200 ±0.5	10		2		300	100		0		47k	No	No	4700.00	As above; dual mono.
	Spatial Pro		2-200 ±0.5	10		2		300	100		0		47k	Yes	No	10,000.	As above.
McINTOSH	C34V		20-20 +0,-0.5	10	0.01	0.01	5	0.40	91	84	250	5	65	47k	No	No	2195.00	
	C30		20-20 +0,-0.5	10	0.007	0.007	4	0.40	115	84	200	5	65	47k	No	No	1649.00	
	C504		20-20 +0,-0.5	10	0.02	0.02	2	0.40	91	84	250	3	50	47k	No	Yes	1090.00	
McLAREN AUDIO	602		5-100 +0,-1	16	0.015		0	0.05	150	92	86	100	0		Var.	Yes	Var.	1195.00	
	402		5-100 +0,-1	16	0.015		0	0.05	150	92	86	100	2		Var.	Yes	Var.	1495.00	
MEITNER AUDIO	PA-6(RI)		1-100 +0,-3	8	0.01	0.01	1			95	94	500	0		†	Yes	††	1650.00	†Neg-Z current MM input. ††Remote has polarity inversion.
MELOS AUDIO	GK-1	T	2-300 ±1	40	0.09		1	1	600	90	70	50		180	47k	Yes	Yes	1195.00	External power supply.
	GK-2		2-300 ±1	40	0.09		1	1	600	90	76	50		180	47k	Yes	Yes	2295.00	Tube/FET hybrid; external dual mono power supply.
MERIDIAN	201(RI)						2								47k	Yes	No	900.00	
MILSPEC	1	†					2						0					699.00	†Six passive inputs; Milspec 2 or equivalent required for phono. Dual mono.
	2	P	20-20 ±0.2	10	0.02	0.02		1.5		86	78		0	100	47k	Yes		499.00	
	CD 1	†					2						0					399.00	†Passive CD control unit.
	3	†																499.00	Line stage only; for use with Milspec 1, CD 1, or other passive control unit.
MIRROR IMAGE	.2P		0-1M	20	0.05	0.05	2						0	Adj.	47k	Yes	Adj.	950.00	
MONSTER CABLE	Alpha Plus	MC	0-3M +0,-3								72					Yes	No	475.00	Loading selectable on front panel.
MOTIF	MC7		10-100 +0,-1	10	0.1	0.1	1	0.4	150	76	62	22	0	150	47k	Yes	Var.	3500.00	
	MC8		10-100 +0,-1	10	0.1	0.1	2	0.4	150	76	62	22	0	150	47k	Yes	Var.	2250.00	
	MC9		10-100 +0,-1	10	0.1	0.1	2						0				Yes	1295.00	Line level only; optional phono card.
MUSIC REFERENCE	RM-4	T	2-200 +0,-1	20	0.01	0.01				84	64		0	Adj.	Adj.	Yes	Yes	750.00	Auto-mute.
	RM-5 MK-II	T	2-100 +0,-0.2	30	0.05	0.05	2	0.25	1V	81	61	25	0	200	47k		Yes	1050.00	As above; adjustable line gain.
NAD	1130		20-20 ±0.5	8	0.04	0.04	1	1.4	180	76	76	90	2	Sel.	47k	Yes	No	198.00	
	1155		20-20 ±0.3	15	0.02	0.02	2	1.2	200	80	78	80	2	Sel.	47k	Yes	No	398.00	
	1300		20-20 ±0.2	15	0.02	0.02	3	1.2	220	83	79	80	2†	Sel.	47k	Yes	No	438.00	†Parametric.
NAIM AUDIO	NAC 42.5N		20-20 ±0.5				1	2.0				75	0		47k			535.00	
	NAC 42.5S		20-20 ±0.5				1				100	75	0			Yes		535.00	
	NAC 32.5		20-20 ±0.5				2	2.0			100	75	0		47k	Yes		795.00	
NAKAMICHI	CA-7A(RI)		1.5-100 +0,-3	20	0.002		2	2.5	250	90	90	200	3	Sel.	50k	Yes	No	2195.00	
	CA-5		1.5-100 +0,-3	16	0.002		2	2.4	170	90	90	200		Sel.	47k	Yes	No	750.00	
NEW YORK AUDIO LABS	IT	P	10-40	12	0.15	0.05		0.5					0	10	47k	Yes	No	169.00	Hybrid; Model Super IT, $269.00.
	Sonata in A		5-40	12	0.15	0.05	2	0.5					0	10	47k	Yes	Yes	599.00	Hybrid.
	Minuet in A		5-40	30	0.05	0.05	2	Var.					0	Var.	47k	Yes	Yes	949.00	As above; variable phono gain.
	Symphony in A		1-50	35	0.01	0.01	2	Var.					0	Var.	47k	Yes	No	4800.00	Hybrid.
	Liqu 1T		1-150	30	0.05	0.05	2										Yes	399.00	As above; tube line stage; tape and CD dubbing.
NIKKO	B-50II		10-20		0.004	0.004	5	2.5	200			150	2	47	47k	Yes	No	470.00	
	B-30		10-20		0.004	0.004	3	2.5	200			150	2	47	47k	Yes	No	320.00	
NOVA ELECTRO-ACOUSTICS	CPA-100		1-200 +0,-3	12	0.01	0.01	1	2.5	250	75		98	0	40	44k	Opt.	Sel.	1995.00	
	PPA-202	MC	0.05-1.5M +0,-3	1	0.01	0.01					73					Yes	No	300.00	Plug-in for above model.
NUMARK	MMX 2000		20-20 +0,-1.5	10	0.003		6						20	100	47k	No	No		Inputs: Six from three phono, six line, and four mike.
	MMX 1000		20-20 +0,-1.5	10	0.003		3						4	100	47k	No	No		As above.
	DM 1950		20-20 ±1	8	0.01		1	2.5		70		100	6	100	47k	No	No		Inputs: Four from two phono, two line, and two mike.
	DM 1900		20-20 ±1	7	0.25		3	2.5		70		120	6	100	47k	No	No		Inputs: Five from three phono, two line, two tape, and one mike.
	DM 1700T		20-20	8	0.85		1	1.2		70		80	6	100	47k	No	No		Digital echo. Inputs: Four from two phono, four line, and two mike.

(Continued)

PREAMPLIFIERS

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Unit Type: Tube = T, Mono = M, Phono Stage Only = P, Moving Coil Stage Only = MC	Frequency Response, Hz to kHz, ±dB	Maximum Output, V	THD, %	IHF IM Distortion, %	Number of Tape & Processor Loops	MM Phono Sensitivity, mV, for 0.5 V Output at 1 kHz	MM Phono Overload, mV	MM Phono S/N, –dB, "A" Wtd. re: 5 mV	MC Phono S/N, –dB, "A" Wtd. re: 0.5 mV	Number of Tone Controls	High Level Sensitivity, mV	MM Phono Input Capacitance, pF	MM Phono Input Impedance, Ohms	Moving Coil Input?	Does Unit Invert Phase?	Price, $	Notes
NUMARK (Continued)	DM 1450		20-20	6	0.25		0	1.2		62		70	0	100	47k	No	No		Inputs: Two stereo phono or line, two mono line or mike.
	DM 1150A		20-20	6	0.25		0	1.2		62		70	0	100	47k	No	No		Inputs: Two phono or line, two mike.
	DM 650		20-20	6	0.25		0	2.5		66		150	0	100	47k	No	No		Inputs: Two phono or line, one mike.
ONKYO	P-308		0.8-170 ±3	8	0.003		2	2.5	300	92	81	150	2		47k	Yes	No	600.00	
	P-304		0.8-170 ±3	6	0.006		2	2.5	210	85	76	150	2		47k	Yes	No	450.00	
PAC	Pro-Reference II	T	10-100 +0,-1	28	0.01	0.01	1	0.3	300			30	0	100	47k	Yes	No	2895.00	
	C.P.R.	MC	0-150 +0,-1	10	0.01	0.01										Yes	No	695.00	
PARASOUND	PR200		10-100 ±1	†	0.01	0.01	2	2	200	88		150	2	150	50k		No	219.95	†12.5 V. Variable loudness; bass EQ; no step-up needed for MC cartridges.
PEGASUS	Head Amp	MC	20-20 ±0.5	†	0.01	0.01					76					Yes	No	139.00	†8 mV. Variable cartridge loading.
PERFECTIONIST AUDIO	Pretentious One/B	T	0.5-4M ±0.01	27	0.29	0.29	2	1.2	1V	85	80	300	0	100	Sel.	Yes	No	†	†$56,305.49; kit, $33,783.29. IBM-PC XT controlled digital switching and signal control.
PERREAUX	SX-1		20-50 ±0.25	9	0.009	0.009	1	2.5	350	86	66	285	2	100	Sel.	Yes	No	795.00	Class A.
	SA-3		20-50 ±0.25	25	0.009	0.009	1	2	350	86	66	350	0	100	Adj.	Yes	No	1195.00	As above.
	SM-3		20-50 ±0.25	27	.0009	.0009	1	1.8	900	86	72	350	0	100	Adj.	Yes	No	1795.00	As above.
PICKERING	P75	MC	10-120 ±3	4	0.035	0.002										Yes		189.00	For LZ cartridges; uses two 9 V batteries.
PIONEER	C-90(RI)		20-20 ±0.2		0.002			2.5	180	95	85				50k	Yes		799.95	Motor-driven volume potentiometer, 5 audio/5 video inputs, video enhancer.
PROTON	1100		20-20 ±0.3	24	0.005	0.003	2	2.5	290	94	79	150	2	Sel.		Yes		249.00	
PS AUDIO	4.5		1-20 ±0.1	18	0.01	0.01		5	180	88	80	2V	0	150	Var.	Yes	No	499.00	Includes line amp bypass.
	5.0		1-20 ±0.1	18	0.01	0.01		5	180	88	80	2V	0	150	Var.	Yes	Sel.	995.00	Dual mono; eight regulators.
PSE	Studio One		5-100 +0,-0.5	12	0.005	0.005	2	9	200	80	75	250	2	20	47k	Opt.	Sel.	760.00	
	Studio SL		5-100 +0,-0.5	12	0.005	0.005	1	Sel.	200	80		250		20	47k		Sel.	590.00	
QUAD	44		20-20 +0,-1	5	0.05		2†	Sel.	Sel.	Sel.	63	Adj.	2	180	47k	Yes		895.00	†Interchangeable input modules.
	34		20-20 ±0.3	0.5	0.05		1	3	150	75	72	Sel.	2	220	47k	Yes		595.00	
QUICKSILVER AUDIO	M.C. Transformer	MC	1-100 +0,-3	2.8												Yes	No	250.00	23-dB fixed gain.
RANE	MP 24		15-30 +0,-3	†	0.03	0.01	2	8	180	91		100	4	200	47.5k	No	No	995.00	†7.75 V. Preamp/mixer, four stereo input channels, studio faders.
REVOX	B252(RO)		20-20 +0,-0.2	12	0.01	0.01	2	Adj.	23	75	75	160	2	Sel.	47k	Opt.	No	1200.00	
	B286(RO)	†	20-20 +0,-0.2	6	0.005	0.01	2	Adj.	50	80	76	160	2	Sel.	47k	Opt.	No	1690.00	†Tuner-preamp; see also "Receivers," Model B285, for tuner specs.
ROBERTSON AUDIO	Twenty		0.2-400	†	0.009	0.005	1	2.6	127	88	72			100	47k	Yes	No	1495.00	†14.5 V. External power supply.
	Twenty MC																No		
	EK-1		0.1-400	19	0.01	0.01	1					160						2000.00	With strain gauge cartridge.
ROTEL	RC-870		20-20	5	0.004	0.004	2	2.5	150	78	64	Sel.	0	250		Yes	No	399.00	Polystyrene shunt capacitors.
ROWLAND RESEARCH	Coherence One		0.2-500 +0,-3	5	0.05	0.05	3	5	200	87	85	125			Sel.	Yes	Sel.	3600.00	No negative feedback; passive RIAA; external power supply.
SAE	P102		20-20 +0,-0.5	7.5	0.01	0.01	3	1.3	120	82	75	150	2	200	47k	Yes	No	399.00	Two main outputs, programmable tone memories.
	P101		20-20 +0,-0.2	11	0.008	0.008	2	0.3	240	85	80	250	0	Sel.	Sel.	Yes	Yes	650.00	Auto bridging circuit; optional speaker switcher, RS101, $50.00.
	X1P		20-20 +0,-0.2	17	0.01	0.01	1	0.07	250	74	80	230	0	Sel.	Sel.	Yes	No	1200.00	External power supply.

This little device makes Velodyne's ULD-15 the best subwoofer ever made.



It's called an accelerometer. And you'll find one attached to the voice coil of every Velodyne™ ULD-15™ Subwoofer System. Velodyne's patented High Gain Servo (HGS) technology uses the accelerometer to make the ULD-15's bass reproduction superior to any product on the market.

Bass is by far the most difficult music to reproduce. It puts the heaviest demands on your speakers and amplifier. In fact, most woofers can't play the lowest frequencies. Or can't play them clearly. And no conventional loudspeaker can play bass loudly without breaking up. Or without massive distortion.

HGS technology ends these problems forever.

Motional feedback makes the difference. HGS is based on motional feedback, a process in which cone motion is monitored and, when necessary, corrected. As the woofer cone moves, the accelerometer reports the motion to our Power Servo Controller. There, it's compared to the input signal – some 3500 times per second. If the woofer cone's out of step with the input, it's instantly corrected. The result? A subwoofer that's flat to below 20 Hz. And virtually distortion-free bass that can't become boomy, muddy or out of control, especially at louder listening levels.

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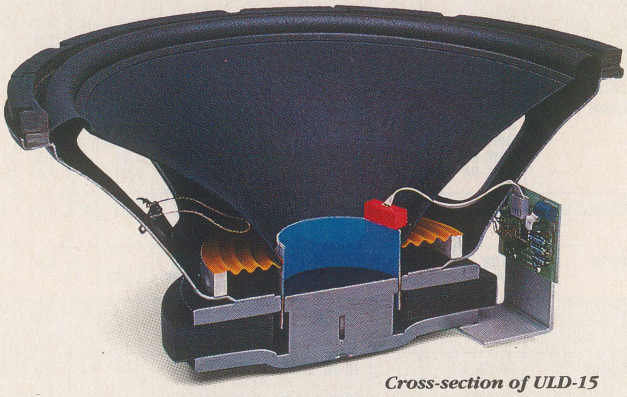
More muscle. Accurate bass requires large drivers and lots of amplifier power. So the ULD-15 matches a 96 oz. magnet structure, 3-inch voice coil (with a full 3/4-inch peak-to-peak travel) to 350 watts of dedicated bass power. That's muscle enough to reproduce even the most demanding deep bass passages – effortlessly.



Cross-section of ULD-15 driver with accelerometer in housing (red) mounted on voice coil (blue). Circuit board contains associated HGS electronics.

Better mids and highs. Beyond adding bass power to your system, our Power Servo Controller incorporates an electronic crossover that frees your main speakers and amplifier from the burden of bass reproduction. This lets them do what they do best – play the mids and highs. And your system's output capability is virtually doubled.

Listening is believing. You owe it to yourself to audition a Velodyne ULD-15 Subwoofer System. Listen to its tightness on drumbeats. Its penetration on deep bass passages. Its overall clarity and punch. You'll agree it's the best subwoofer ever made.

Call **800-VELODYNE** (408-748-1077 in California) for the Velodyne dealer nearest you.

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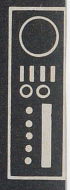
Enter No. 87 on Reader Service Card

PREAMPLIFIERS

MANUFACTURER	Model (RI)=Remote Included, (RO)=Remote Optional	Unit Type Tube=T, Mono=M, Phono Stage Only=P, Moving Coil Stage Only=MC	Frequency Response, Hz to kHz, ±dB	Maximum Output, V	THD, %	IHF IM Distortion, %	Number of Tape & Processor Loops	MM Phono Sensitivity, mV, for 0.5 V Output at 1 kHz	MM Phono Overload, mV	MM Phono S/N, −dB, "A" Wtd. re: 5 mV	MC Phono S/N, −dB, "A" Wtd. re: 0.5 mV	High Level Sensitivity, mV	Number of Tone Controls	MM Phono Input Capacitance, pF	MM Phono Input Impedance, Ohms	Moving Coil Input?	Does Unit Invert Phase?	Price, $	Notes
SANSUI	C-2301		0-500 +0,-3	1.2	0.003		2	2.0	350	90	80				47k	Yes		2400.00	
	C-2102		0-300 +0,-3	1	0.003		2	2.5	300	88	70				47k	Yes		650.00	
SESCOM	PO-11		20-20 ±1	5	0.1	0.1		1.75	150	70		150	0	300	47k	No	No	40.00	PO-1 power supply required.
SIMA ELECTRONICS	P-2001		0-100 +0,-0.5	11	0.05	0.05	1	1	215	78	67	100		100	47k	Yes	No	595.00	
SONTEC	PPP-102		1-400 ±1	15	0.003	0.003	0	Var.	150	88	68		0	Var.	Var.	No	No	825.00	Input stage gain-adjustable to match cartridge.
SOTA	Head Amp II	MC	1-500 +0,-3	2	0.03	0.03					90					Yes	No	500.00	Dual mono; selectable impedance.
SOUND-CRAFTSMEN	DX4200		5-100 ±0.25	10	0.01	0.01	4	Adj.	300	97	97	90	†	Adj.	47k	Yes	No	699.00	†Dual 10-band EQ. Subsonic filter; analyzer; includes test record.
	DX4100		5-100 ±0.25	10	0.01	0.01	4	2.8	200	97		90	†	100	47k	No	No	549.00	As above.
	DX4000		5-100 ±0.25	10	0.01	0.01	4	2.8	200	97		90	0	100	47k	No	No	399.00	Subsonic filter; CD and video inputs.
	DX3000		5-60 +0,-1		0.01	0.01	2		150	85		90	2	100	47k	No	No	299.00	Inputs as above.
SPECTRAL	DMC-10 Series Delta		0-1M ±0.1	40	0.01	0.01	1	1.5	1.2V	95	78	100		Sel.	Sel.	Yes	No	3195.00	External power supplies.
	DMC-6		0-1M ±0.1	40	0.01	0.01	1	1.5	1.2V	95	76	100		Sel.	Sel.	Yes	No	2495.00	As above.
	DMC-5A		0-1M ±0.1	40	0.01	0.01	1	1.5	1.2V	95	75	100		Sel.	Sel.	Yes	No	1795.00	
SPECTRASCAN	LCA-10		5-100 +0,-3	15	0.05	0.05	2	1.0	300	85	78	100	0	Sel.	47k	Yes	No	1095.00	Without MC input, $895.00.
STANTON	310B	P	20-20	10	0.05			0.5	120	70			2	Adj.	47k	No	No	280.00	
	SP98	MC	10-120 ±3	4	0.035	0.002										Yes	No	189.00	
STAX	SRA-14S		20-20	2	0.003		2	2.5	200	80	78	150	0		47k	Yes	No	1800.00	Includes Class-A driver for Stax headphones.
STRELIOFF	PA/RS 1		10-60 ±1.5	25	0.01	0.01	3	1.0	250	92	85	100		Sel.	Sel.	Yes	No	1500.00	External power supply; special order.
	PA/RS 11		10-60 ±1.5	25	0.01	0.01	3	1.0	250	97	90	100		Sel.	Sel.	Yes	No	2000.00	As above; dual mono.
	PB 1		10-60 ±1.5	25	0.01	0.01	3					100					No	850.00	Special order.
	PM 1	M	10-60 ±1.5	10	0.01	0.01	2					100					No	500.00	As above.
	PMP 1	M	10-60 ±1.5	10	0.01	0.01	2	1.0	250	95	88	100		Sel.	Sel.	Yes	No	750.00	As above.
SUMO	Electra Plus		2-100 +0,-3	18	0.01	0.01	1	0.37	125	85	80	50	2	10	47k	Yes	No	599.00	
SUPERPHON	Revelation Basic		0.2-300 ±3	†	0.002	0.05	1	6.35 µV	180	80		124		100	47k	No	No	349.00	†14.5 V. Dual mono version, $459.00.
TALISMAN	Alchemist		1-1M	10	0.01	0.01	1	0.85	200	79						No	No	1275.00	
TANDBERG	TCA 3008A		20-20 +0,-0.1	10	0.006	0.006	2	1	290	78	74	70	2		47k	Yes	No	995.00	
	TCA 3018A		20-20 +0,-0.1	10	0.006	0.006	2	1	290	78	74	80			47k	Yes	No	1695.00	No negative feedback.
TECHNICS	SU-A200		0.5-180 +0,-3	8	0.001		4	0.63	150	80	77	36	0		47k	Yes	No	1000.00	
	SU-A4MK2		0-100 +0,-3	8	0.006		2	1		92	82	150	4		47k	Yes		1100.00	
	SU-A6MK2		0.5-200 +0,-3	8	0.002		3	0.63	150	80	77	36	4		47k	Yes		600.00	
	SH-305MC	MC	3-300 ±0.2		0.001											Yes		400.00	
THRESHOLD	FET ten/pc	P	1.5-125 +0,-3	20	0.01	0.01		5		90	80		0	Var.	Var.	Yes	No	1100.00	Provides RIAA equalized high-level output.
	FET ten/hl		1.5-125 +0,-3	20	0.01	0.01	2						0				No	1800.00	High-level inputs only.
	FET nine		1.5-125 +0,-3	20	0.05	0.05	2	5		88	78		0	Var.	Var.	Yes	No	1500.00	
VANDERSTEEN AUDIO	OL-1	MC	0.5-500 +0,-3	1	0.01	0.01					80					Yes	No	285.00	Variable loading.
VENDETTA RESEARCH	SCP-1	MC	0.1-1M	0.3	0.01	0.01					90					Yes	Yes	895.00	Variable loading, 10 to 200 ohms.
VSP LABS	Straightwire II		10-60 ±0.5	9	0.05	0.02	2	0.5	245	82	72	500	0	47	47k	Yes	No	1090.00	
YAMAHA	C-85		20-20 ±0.2	8.5	0.001	0.002	2	2.5	500	95	91	150	3	Sel.	Sel.	Yes	Yes	799.00	
	C-65		20-20 ±0.2	8.5	0.001	0.002	2	2.5	500	95	91	150	3	Sel.	Sel.	Yes	No	549.00	
	C-45		20-20 ±0.2	11	0.002	0.002	2	2.5	170	94	84	150	4	220	47k	Yes	No	369.00	
	C-2x		20-20 ±0.2	10	0.001	0.002	2	2.5	500	100	94	150	2	Sel.	47k	Yes	No	1300.00	

...First the Bad News:

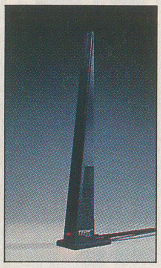
The FM forecast calls for cloudy reception, scattered signals and severe mutipathing.



TERK™ Technologies Corp.

Enter No. 83 on Reader Service Card

...Now the Good News:



The Terk 8403 FM antenna will delight audiophiles and music lovers . . . improved FM reception . . . minimize the effects of multipath interference.

—**VENTURE**
May 86

Technically sophisticated and visually attractive indoor antenna . . . agreeably discreet . . . blends nicely with contemporary furnishings.

. . . effectiveness comparable to that of a much larger antenna.

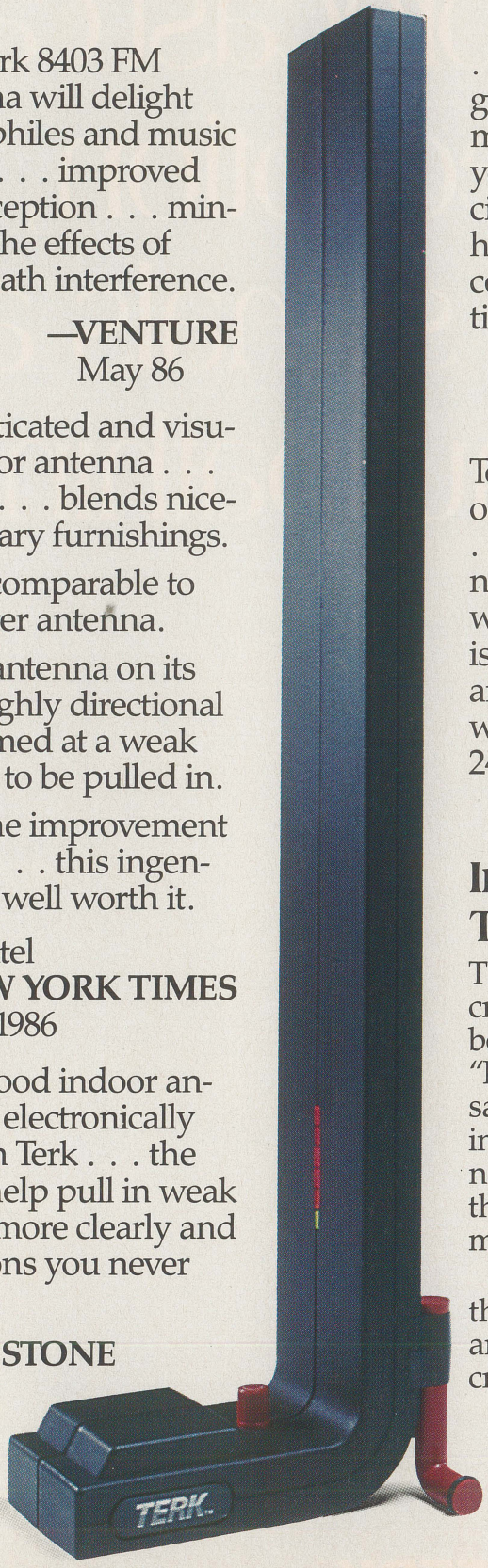
. . . by laying the antenna on its side, it becomes highly directional so that it can be aimed at a weak and distant station to be pulled in.

. . . considering the improvement it is likely to bring . . . this ingenious gadget seems well worth it.

—Hans Fantel
—**THE NEW YORK TIMES**
April 28, 1986

Your best bet is a good indoor antenna like the new electronically amplified one from Terk . . . the Terk antenna can help pull in weak or distant stations more clearly and even bring in stations you never heard before.

—**ROLLING STONE**
—June 1986



. . . this little antenna really does a great job . . . it will help you get more out of your FM radio than you thought was possible — especially if you are a city dweller who had all but given up hope of receiving clean, noise-free, distortion-free signals.

—Leonard Feldman
—**AUDIO**
January 86

Terk 8043 takes laurels, rounding out the trio of Accessories winners . . . results in an increase in the number of available FM stations as well as in audible reception of existing stations. (The 16¾-inch-high antenna contains a signal amplifier with an adjustable gain of 0 to 24dB.)

—**AUDIO VIDEO**
October 1985

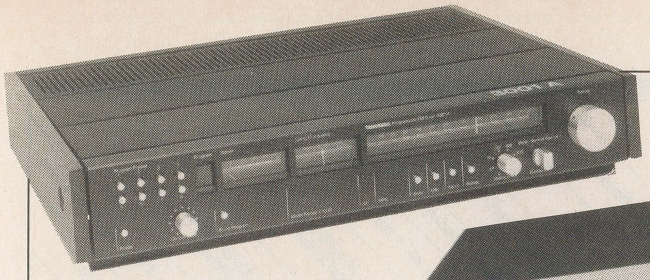
Introducing The Terk 9500 The Best Reception Ever.

There's not a lot we can say that the critics haven't already said. In fact, being named Audio Video's 1985 "Product of the Year" pretty much says it all. But we would like to introduce you to our newest antenna, the Terk 9500. It does everything the award-winning 8403 does, yet remarkably, it even does it a little better.

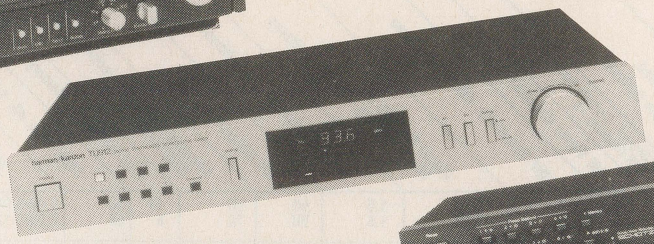
It should come as no surprise that the forecast for the 9500 calls for another brilliant reception from the critics as well as from your tuner.

TERK™ Technologies Corp.
20930 South Bonita St.
Carson, California 90746
213/538-5300

TUNERS



TANDBERG TPT 3001A



HARMAN/KARDON TU912

NAKAMICHI ST-7

AM STEREO CODE
K—Kahn/Hazeltine
M—Motorola C-Quam
U—Universal
O—Other

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	FM Only = F, Digitally Synthesized = D, FMX Decoding = X	AM Stereo Capable? See Code	IHF Sensitivity, dBf, Mono/Stereo	Signal Strength for 50-dB Quieting, dBf, Mono/Stereo	Capture Ratio, dB, Wide/Narrow	AM Suppression, dB	Alternate Channel Selectivity, dB, Wide/Narrow	Total Number of Memory Presets	Separation, dB, 1 kHz	THD, %, Mono/Stereo, 1 kHz, 100% Modulation	THD, %, Mono/Stereo, 6 kHz, 100% Modulation	Maximum S/N, –dB, Mono/Stereo	Weight, Lbs.	Price, $
ACCUPHASE	T-106 T-107	D F/D	No No	11/29 11/29	17/37 17/37	1.5/ 1.5/	80 80	70/100 70/100	14 12	50 50	0.04/0.04 0.04/0.04	0.04/0.08 0.04/0.08	83/79 90/85	20 13	1400.00 925.00
ADCOM	GFT-555 GTP-500(RI) Tuner/Preamp	D D		9.5/	12/35.5 12.5/36.5	1.5	70		16 16	53 52	0.04/0.07 /0.09	0.05/0.09	85/78 /75	14	299.95 499.95
ADS	T2	D	No	11.0/26.1	14/35	2.5	55	75	16	38	0.15/0.2		70/65	13	400.00
AKAI	AT-S7 AT-A301	D D	No No		16.2/37.2 16.2/37.2	1.0 1.5	70 60	80 60	20 16	53 45	0.03/0.05 0.1/0.3	0.03/0.05 0.1/0.3	80/75 75/65	7¼ 6	280.00 220.00
AR	T-04(RI)	D	No	11.2/	14.6/33.2	1.5	60	70	16	40	0.2/0.3	0.2/0.3	75/73		370.00
AUDIO DESIGN ASSOCIATES	FM600	F	No	10.8/		1.9		90	6	47	/0.15		/65	12	2395.00
A.V.A.	Super FET Transcendence	F F/D	No No	10/ 11/	19/ 17.2/37.2	1.5 1.5	58 60	65 60	0 5	40 45	0.5/0.9 0.1/0.18		/65 72/68	11 12	450.00 735.00
CARVER	TX-11a TX-2	D D	M	11.3/16.3 16.1/23.5	11.3/16.3 16.1/23.5	/1.0 1.6	75 72	35/110 58	13 8	45 42	/0.05 /0.2	/0.05 /0.2	/82 /74	11 9	699.00 399.00
CREEK	3140	F	No	10/17	9.0/32.0	0.4/3	50	30/100		32	0.2/0.3	0.3/0.4	80/70	4	350.00
CROWN INTERNATIONAL	PFM-3	D	No	9.31/	14.2/30.3	1.5	80	75	12	60	0.05/0.05		80/75		795.00
CURTIS MATHES	AT360	D	No		18.1/38.1		55	65	16	40	0.2/0.3		75/71	2.4	
DENON	TU-400 TU-600	D D	No No	17.3/38.5 15.3/37.2		1.5 1.5/	50 65	60 50/70	16 20	40 55	0.08/0.15 0.03/0.04		80/76 92/86	7 8	250.00 350.00
GSI	T-1	F	No	8.8/11.2	13.2/34	1.5/1.5	60	50/83	5	60	0.02/0.05	0.02/0.07	75/73	18	795.00
DAVID HAFLER CO.	DH-330	F/D	No	11.3/	17.2/37.2	1.5		70	5	45	0.15/0.18		72/68	9	460.00; Kit, 385.00
HARMAN/KARDON	TU905 TU912 TU915	 D D		10.8/ 11.2/ 10.8/	/37.3 /37 /37	1.3 1.0 1.0	50 56 60	70 60 70	 16 16	45 50 60	0.09/0.15 0.06/0.08 0.05/0.08		77/71 82/74 82/74	10 10 10	215.00 295.00 450.00
HITACHI	FT5500II	D	No	10.8/	18.2/36.2	1.0/	65	35/80	16	65	/0.02		88/82	7	350.00
JVC	FX-50BK	D	No	10.3/	14.8/38.3	1.5	60	70	32	50	0.08/0.08		84/78	7½	
KENWOOD	KT-880 KT-75 KT-45			10.8/ 10.8/ 10.8/	16.2/38.8 16.3/39 14.7/39	1.0 1.5 2.0	70 66 55	65 50 50	12 20 14	68 45 45	0.018/0.02 0.2/0.22 0.2/0.3		88/83 78/74 76/70	7.3 6.4 6.4	235.00 190.00 130.00
KINERGETICS	KBT-1	D	No	9.0/11.2	13.5/36.0	1.5/1.5	60	50/70	10	40	0.02/0.05	0.02/0.05	75/73	13½	660.00
KYOCERA	T-910	D	No	9.8/	14.8/	1.0/	65	40/85	16	58	0.06/0.07	0.06/0.07	88/76	26½	590.00
LUXMAN	T-100(RO) T-102(RO) T-02	D D D	No No No	10.8/ 10.3/ 10.3/	19.0/39 16/37 15.8/36.8	1.5 1.0/1.75 1.3/2.5	70 70 65	65 45/80 66/100	16 20 24	50 60 55	0.1/0.15 0.05/0.06 0.05/0.06	0.2/0.3 0.1/0.15 0.06/0.08	75/70 85/75 81/77	5.1 5.5 10.6	250.00 330.00 500.00
MAGNUM/DYNALAB	FT-101	F		10.3/11.2	13.2/34.0	2.0/1.5	70	55/75	7	60	0.1/0.18		80/70	12	549.00
MARANTZ	ST560	D	No	10.8/	15/37	1		60	24	45	0.15/0.3		76/70	5	300.00

TUNERS

AM STEREO CODE
K—Kahn/Hazeltine
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McINTOSH	MR7082	D	Syn.	13/13	18/36	1.5	60	55	14	50	0.08/0.08	0.08/0.12	80/75	15	1499.00
	MR510	F/D	No	13/13	16/30	1.5	60	70	6	55	0.08/0.12	0.08/0.20	78/73	18	1699.00
MELOS AUDIO	FM-T	F/D	No	8.8/11.2	13.2/34	1.5/1.5	60	50/83		60	0.02/0.23		75/73		1195.00
MISSION	Cyrus T	D	No	26/46			52	58	27	36	0.15/0.4		73/71	4.4	449.00
NAD	4130	D	No	10.3/	16/25	1.5	60	65	10	50	0.09/0.09		80/75	7¼	228.00
	4155	D	No	10.3/	15.8/24	1.5	65	70	10	50	0.09/0.09		82/75	8¾	428.00
	4300	D/X	No	9/	11.2/22	1.5	70	80	16	50	0.07/0.07		85/80	10½	548.00
NAIM AUDIO	NAT 01	F												22	1995.00
	NAPST														
	NAT 101	F												9	790.00
NAKAMICHI	ST-7(RO)	D	No	10.0/17.0	14.0/28.0	1.9	60	60	16	55	0.06/0.08		80/76	10⅜	725.00
NEC	T-6	D	No	13.2/17.4	15.9/36.8	1.0	60	80	14	55	0.06/0.08	0.06/0.08	83/78	8.6	229.00
	T-601E(RO)	D	No	13.2/18.8	15.8/38.3	1.4	55	60	16	40	0.15/0.3	0.15/0.3	75/70	7	199.00
NEW YORK AUDIO LABS	Major Armstrong	F/X	No	10.8/	13.5/36.1	1.5/	60	50/70	0	55	0.05/0.1		75/70	15	999.00
NIKKO	G-30	D	No	11.2/	14/20			60	12	45	0.15/0.2		70/67	8⅞	
	NT-700II	D	No	11.2/	14.7/20			60	12	45	0.1/0.2		75/68	9½	
ONKYO	T-9090	F/D		12.8/18	15.8/37.2	1.0		80	20	55	0.009/0.02		95/85	15	650.00
	T-4087	D	No	10.3/17.2	16/36	1.0		80	20	45	0.03/0.07		85/77	11	380.00
	T-4057	D	No	10.8/17.2	16.1/36.1	1.3		55	20	40	0.1/0.2		75/68	9	260.00
	T-4038	D	No	11.2/		1.5		50	16	40	0.1/		73/	7	160.00
PARASOUND	ST220	D	No	10.8/37.7	16.1/	1.4	65		12	48	0.1/0.15	0.1/0.15	82/76	10	239.95
PERREAUX	TV-1	F/D	No	10.3/	15.3/35.8	1.5	50	45	7	50	0.12/0.14		70/68	12	650.00
	TV-3	F/D	No	12.8/	17.3/36.8	1.5	50	45	7	50	0.12/0.14		70/68	13½	795.00
PIONEER	TX-V1160	D	No	11.2/	17.3/38.2	1.0		65	24	40	/0.2		80/75	9.1	329.95
	F-77	D	No	10.8/	14.2/35.9	1.0		56	16	60	0.05/0.08		86/81	5.2	239.95
	TX-1060	D	No	11.2/	/36.2			67	16	40	/0.35		78/71	5.5	149.95
	F-99X Elite	D	No	10.8/	12.8/34.8	0.8		85	16		0.0095/0.02		94/87	9.2	324.95
PROTON	440	D	No			1.5	60		12	45	/0.2		83/74	15	249.00
	430R(RO)	D	No			1.5			10		/0.2				219.00
PSE	Studio III	F	No		17/40	1	70		6	55	0.1/0.2		75/70	9	535.00
QED	T237	F	No				55		4	45			72/	9	350.00
QUAD	FM4	F	No		10/29	1.5	60	53	7	40	0.15/0.15		76/70	7	595.00
RCA	Dimensia	D	No	11.2/	19.2/38.2	1.0	50		16	45	0.1/0.15		82/77	5¼	249.00
	MAT110(RO)														
REVOX	B261(RO)	F/D	No	10.8/34.8	13.2/34.8	2/2	72	78/	20	43	0.03/0.07	0.01/0.01	79/75	18¾	1500.00
ROTEL	RT-830		No	10.8/		1.5	60	60	0		0.2/		70/	7	199.00
	RT-850	D	No	10.8/		1.0	65	65	16		0.07/		80/	8.4	299.00
SAE	T102	D	No	10.3/17.0	14.0/34.0	1.5/	55	30/80	16	45	0.10/0.15	0.15/0.20	75/70	17	349.00
	T101	D	No	10.3/17.0	14.0/35.3	1.2/2.2	60	40/100	16	55	0.05/0.08	0.10/0.15	75/70	20	650.00
SANSUI	TU-D99AMX	D	U	10.8/	16.2/37.7	1.0			16	60	0.015/0.02		90/84	7.7	450.00
	TU-D55X	D	No	10.8/	16.0/36.0	1.0			16	50	0.05/0.08		85/79	6.2	300.00
	TU-D33X	D	No	10.8/	16.0/36.0	1.0			12	40	0.08/0.12		78/72	5.1	250.00
SONY	ST-S444ESII	D	No	10.3/	16.1/38.3	1	65	80	10	50	0.05/0.1	0.2/0.3	90/84	11	250.00
	ST-S222ES	D	No	10.3/	16.1/38.3	1	65	70	10	50	0.05/0.1	0.2/0.3	86/80	11	200.00
SOUNDCRAFTSMEN	T6200	D	No	9.5/30	12/36	1.0	65	70	16	50	0.08/0.1		80/75	12	299.00
SUMO	Charlie	F/D	No	13/18	17/37	1.0/1.0	60	65/100	5	50	0.04/0.05	0.05/0.08	80/74	12	499.00
TANDBERG	TPT 3001A	F	No	7.5/	9.3/32.1	0.4/3	70	30/100	8	70	0.03/0.04	0.03/0.1	95/92	15.3	1495.00
	TPT 3011A	F	No	7.8/	14.8/37.3	0.9	70	100	8	50	0.2/0.3	0.3/0.4	78/75	12.6	895.00
TECHNICS	ST-G6T	D	No	12.8/	20.2/40.2	1.0/	55	45/25	16	55			80/73	5.1	330.00
	ST-G7(RO)	D	No	12.8/		1.0/	70	55/25	16	65				9	475.00
	ST-G50	D	No	10.8/	18.1/38.1	1.0/	55	45/25	39	60			80/73	4.8	245.00
	ST-G40	D	No	10.8/	18.1/38.1	1.0	55	60	16	50			80/73	4.8	180.00
VECTOR RESEARCH	VU-1500	D	No	11.2/	14.6/37	1.0	58	60	16	50	0.08/0.2	0.2/0.3	75/73	8½	199.95
YAMAHA	T-85	D	No	10.3/	15.3/20	1.2	70	90	20	68	0.02/0.03		95/87	11	449.00
	T-1020	D	No	10.3/	15.3/20	1.2	65	90	20	55	0.04/0.05		90/84	7¾	359.00
	T-720	D	No	10.3/	15.3/20	1.5	60	55	20	50	0.05/0.07		88/84	7½	299.00
	T-520	D	No	9.3/	15.1/37.7	1.5	55	85	16	40	0.1/0.2		81/76	6¾	249.00
	T-420	D	No	9.3/	15.3/37.7	1.5	55	85	16	40	0.1/0.2		82/76	5	189.00

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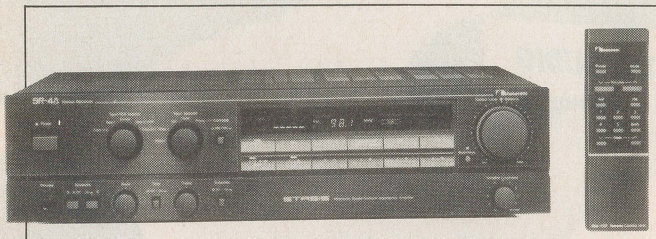
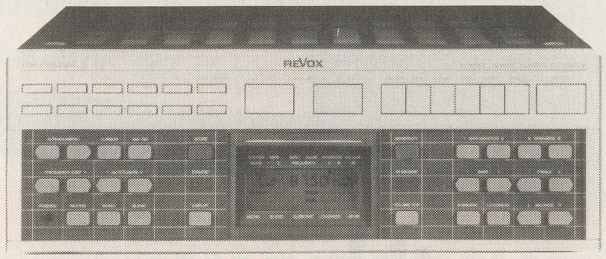


NAKAMICHI SR-4A



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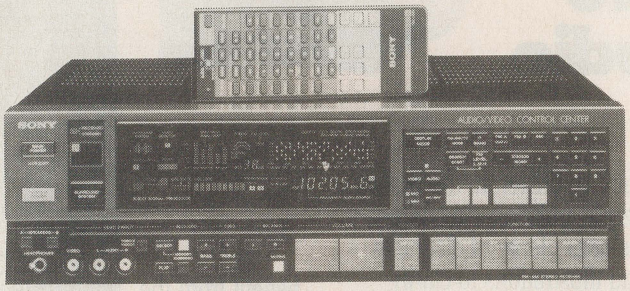
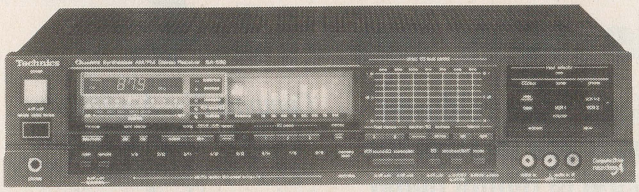


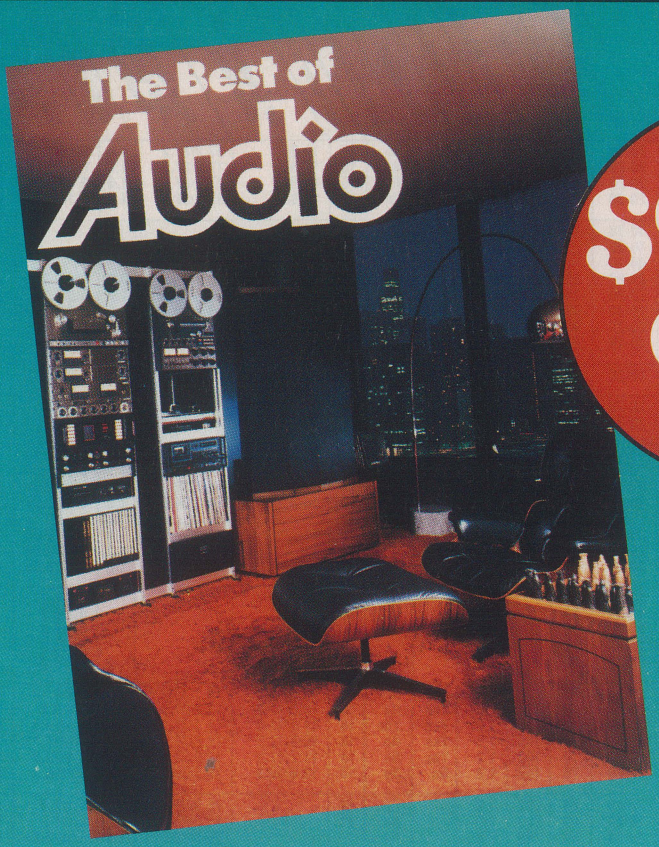
SONY STR-AV880



TECHNICS SA-590

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	FM Only = F, Digitally Synthesized = D, AM Stereo Capable = A	AMPLIFIER SECTION: Average Watts per Channel, 8 Ohms/4 Ohms	THD, %	IHF IM, %	Rated Power Bandwidth, Hz. to kHz.	MM Phono S/N, –dB, "A" Wtd. re: 5 mV	MM Phono Overload, mV	Dynamic Headroom, dB	Video Inputs?	Surround/Delay/Ambience Circuits?	Total Number of Memory Presets	TUNER SECTION: IHF Sensitivity, dBf, Mono/Stereo	Signal Strength for 50-dB Quieting, dBf, Mono/Stereo	Capture Ratio, dB	THD, %, 100% Modulation, 1 kHz, Mono/Stereo	Alternate Channel Selectivity, dB	Maximum S/N, –dB, Mono/Stereo	Weight, Lbs.	Price, $
ADS	R4(RO)	D	70/70	0.05	0.05	20-20	80		2.0	Yes	No	30	11/26	14/35	2.5	0.1/0.15	65	75/70		800.00
AKAI	A-V405(RI)	D	100/	0.05		20-20				Yes	Yes	16		16.2/37.2	1.5	0.1/0.3	60	75/65	23.1	550.00
	A-V305(RI)	D	50/	0.05		20-20				Yes	Yes	16		16.2/37.2	1.5	0.1/0.3	60	75/65	22	460.00
	A-V205(RI)	D	60/	0.05		20-20				Yes	Yes	16		16.2/37.2	1.5	0.1/0.3	60	75/65	16.3	370.00
	A-V105	D	35/	0.3		40-20				Yes	Yes	16		19.2/40.2	2.0	0.2/0.4	60	70/60	11.7	230.00
AR	X-10(RI)	D	100/	0.03	0.03	20-20	80	120	2	Yes	No	16	11.2/	14.6/33.2	1.5	0.2/0.3	70	75/73		800.00
	X-06(RI)	D	60/	0.03	0.03	20-20	78	150	2	Yes	No	16	11.3/	17.2/36.1	1.5	0.2/0.3	70	75/73		600.00
	X-04	D	/40	0.03	0.03	20-20	75	105	2	Yes	No	16	11.3/	17.2/37.2	1.5	0.2/0.3	60	75/73		380.00
BANG & OLUFSEN	Beomaster 5500(RI)	F/D	50	0.09	0.1	20-20	80	125	1.5	No	No	20	14/19	19/40	1.7	0.16/0.2	70	75/70	19.2	1659.00
	Beomaster 3000(RI)	F	30	0.1	0.1	20-20	75	50	1.6	No	No	5	17/22	23/43	1.7	0.3/0.35	60	72/67	15	649.00
CARVER	2000		200	0.15	0.1	1-30	85	100		Yes	Yes	6	16.1/23.5	16.1/23.5	1.0	/0.2	42	/78	33	1595.00
	Receiver		150	0.05	0.05	1-30	85	100		Yes		6	16.1/23.5	16.1/23.5	1.0	/0.2	40	/76	28	875.00
	900		90	0.15	0.1	1-30	85	100		Yes		8	16.1/23.5	16.1/23.5	1.0	/0.2	38	/74	26	635.00
DENON	DRA-95VR	D	85/195	0.02	0.01	5-40	90	470		Yes	Yes	16		16.4/37.3	1.5	0.05/0.08	60	85/81	26	650.00
	DRA-75VR(RI)	D	65/150	0.02	0.03	5-40	88	470		Yes	No	16		16.4/37.3	1.5	0.07/0.12	60	82/80	25	500.00
	DRA-55V	D	55/93	0.01	0.025	5-40	86	470		Yes	No	16		16.4/38.5	1.2	0.08/0.15	55	82/78	16½	400.00
	DRA-35V	D	40/81	0.03	0.03	5-40	86	470		Yes	No	16		16.4/38.5	1.2	0.1/0.2	55	82/78	13	300.00
HARMAN/ KARDON	hk385i		30	0.09		10-60	80	185					11.2/	16.8/37	1.5	0.08/0.12	60	/74	13.9	295.00
	hk395i	D	30	0.09		10-60	80	185				10	10.8/	15.6/37	1.2	0.08/0.12	65	/75	13.9	395.00
	hk495i	D	45	0.09		10-60	80	185				16	10.8/	15.6/37	1.2	0.08/0.12	65	/75	15.4	550.00
	hk795i	D	70	0.08		10-100	80	220				16	10.8/	14.6/37	1	0.08/0.06	70	/75	23.4	750.00
HITACHI	HTA25F	D	25	0.5	0.5	20-40	70	140		Yes	No	12	13.2/	20.2/38.2	1.0	0.3/0.4	53	74/70	11	200.00
	HTA35F	D	35	0.05	0.05	10-30	72	140		Yes	No	8	13.2/	20.2/38.2	1.0	0.15/0.25	53	74/70	12	250.00
	HTA55F	D	55	0.05	0.05	10-30	72	140		Yes	No	20	13.2/	20.2/38.2	1.0	0.15/0.25	53	74/70	15	400.00
	HTA70F	D	70	0.03	0.03	10-30	72	140		Yes	No	20	13.2/	20.2/38.2	1.0	0.15/0.25	53	74/70	18	540.00
	HTA50AV(RI)	D	50	0.05	0.05	10-30	72	140		Yes	Yes	20	13.2/	20.2/39.2	1.0	0.5/0.5	50	74/70	13.5	550.00
	HPT120AV(RI) Tuner/Preamp	D		0.05	0.05		72	140		Yes	No	20	13.2/	20.2/39.2	1.0	0.5/0.5	50	74/70	8.2	400.00
JVC	R-X9VBK(RI)	D	120	0.007	0.007	5-50	80			Yes	No	32	10.3/	14.8/38.3	1.5	0.08/0.08	70	84/78	23	
	R-X7VBK(RI)	D	70	0.007	0.007	5-30	78			Yes	No	32	10.3/	14.8/38.3	1.5	0.08/0.08	70	84/78	20.5	
	R-X5VBK(RI)	D	60	0.007	0.007	5-30	78			Yes	No	32	10.8/	16.3/38.3	1.5	0.15/0.2	60	82/73	19.9	
	R-X3BK(RI)	D	45	0.08		10-30	78			No	No	32	10.8/	16.3/38.3	1.5	0.15/0.2	60	80/73	10.4	
	R-X1BK(RI)	D	35	0.08		10-30	78			No	No	32	10.8/	16.3/38.3	1.5	0.15/0.3	60	80/73	10	
	R-X111	D	25	0.5		10-30	78			No	No	16	10.8/	16.3/38.3	1.5	0.15/0.3	60	80/73	8.4	
KENWOOD	KR-V95R(RI)		100	0.008	0.008		85			2	No	20	10.8/	14.2/36.8	1.0	0.07/0.1	55	80/72	19.8	510.00
	KR-V75R(RI)		70	0.008	0.008		73			2	No	20	10.8/	14.2/36.8	1.0	0.07/0.1	55	80/72	19.4	420.00
	KR-V55R(RI)		55	0.03	0.03		73			3	No	24	10.8/	14.2/37.1	1.2	0.09/0.12	55	78/72	14.8	330.00
	KR-V45		55	0.03	0.03		73			3	No	24	10.8/	14.2/37.1	1.2	0.09/0.12	55	78/72	14.8	280.00
KYOCERA	R-861(RO)	F/D	100	0.02	0.02	10-60	85	150	1.0	Yes	No	14	9.8/17.3	14.8/35	1.0	0.06/0.07	40	82/76	27	975.00
	R-661(RO)	F/D	70	0.02	0.02	10-60	82	82	1.0	Yes	No	14	10.1/17.5	15.5/36.5	1.0	0.07/0.1	40	80/74	25	750.00
	R-461(RO)	F/D	50	0.02	0.02	10-80	82	82	2.1	Yes	No	12	10.3/17.8	17.0/37.2	1.2	0.09/0.15	55	77/72	18½	550.00

SOUND INSURANCE



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MANUFACTURER	Model (RI) = Remote Included, (RD) = Remote Optional	FM Only = F, Digitally Synthesized = D, AM Stereo Capable = A	Average Watts per Channel, 8 Ohms/4 Ohms	THD, %	IHF IM, %	Rated Power Bandwidth, Hz to kHz	MM Phono S/N, – dB, "A" Wtd. re: 5 mV	MM Phono Overload, mV	Dynamic Headroom, dB	Video Inputs?	Surround/Delay/Ambience Circuits?	Total Number of Memory Presets	IHF Sensitivity, dBf, Mono/Stereo	Signal Strength for 50-dB Quieting, dBf, Mono/Stereo	Capture Ratio, dB	THD, %, 100% Modulation, 1 kHz, Mono/Stereo	Alternate Channel Selectivity, dB	Maximum S/N, – dB, Mono/Stereo	Weight, Lbs.	Price, $
AMPLIFIER SECTION														**TUNER SECTION**						
LUXMAN	R-406	D	60	0.05		20-20	86			No	No	16	10.3/	17.2/37.2	1.4	0.14/0.15	60	79/72	18.7	660.00
	R-106	D	60	0.05		20-20	86			No	No	16	10.3/	17.2/37.2	1.4	0.14/0.15	60	79/72	18.7	660.00
	R-105	D	55	0.05		20-20	86			No	No	16	10.8/	17.2/37.2	1.4	0.14/0.15	60	79/72	15	500.00
	R-104	D	33	0.08		20-20	76			No	No	16	10.8/	17.2/37.2	1.4	0.14/0.15	60	79/72	13.4	380.00
MARANTZ	SR250	D	25	0.25	0.25	40-20	75	120		No	No	16	12.1/						13.2	200.00
	SR360	D	30	0.25	0.25	40-20				Yes	No	16	11.2/							200.00
	SR560	D	50	0.15	0.15	40-20				Yes	No	16	11.2/							250.00
	SR940	D	110	0.01	0.01	20-20	85	225		No	No	16	9.8/	13.1/35	0.9	0.1/0.2	65	72/65	28.7	630.00
	TA60	D	60	0.1	0.1	20-20	75	100		No	No	24	11.8/	16.8/39.2	1.2	0.2/0.3	50	75/68	20.9	350.00
	TA80	D	80	0.09	0.09	20-20	75	100		No	No	24	11.8/	16.8/39.2	1.2	0.2/0.3	50	75/68	20.9	430.00
	TA130	D	130	0.05	0.05	20-20	80	120		No	No	16	11.3/	16/38	1.0	0.15/0.3	50	76/68	29.8	570.00
	TA165	D	165	0.05	0.05	20-20	80	120		No	No	16	10.8/	15/37	1.0	0.15/0.3	50	76/68	34.2	650.00
McINTOSH	MAC4200	D	75/100	0.02	0.02	20-20	80	95	1.4	No	No	12	13/13	16/30	1.5	0.08/0.12	70	75/70	40	2890.00
MITSUBISHI	DA-R56	D/A	70	0.015		20-20	90			Yes	Yes	14		16.4/37.3	1.5	0.2/0.3	60	82/75	22	400.00
	DA-R46	D	50	0.015		20-20	90			Yes	Yes	14		16.4/37.3	1.5	0.2/0.3	60	82/75	21	300.00
NAD	7235PE	D	35	0.03	0.03	20-20	76	170	6	Yes	No	10	10.3/	14.2/34.2	1.5	0.09/0.09	70	82/75	17½	398.00
	7250PE	D	50	0.03	0.03	20-20	76	170	6	Yes	No	10	10.3/	14.2/29	1.5	0.08/0.08	70	82/76	20¼	598.00
	7175PE	D	75	0.03	0.03	20-20	76	170	6	Yes	No	10	10.3/	14.2/29	1.5	0.08/0.08	70	82/76	20½	748.00
	7220PE	D	20	0.03	0.03	20-20	76	170	5	Yes	No	10	10.3/	14.2/34.2	1.5	0.09/0.09	70	82/75	14	278.00
NAKAMICHI	SR-4A(RI)	D	60/	0.1	0.1	20-20	89	150		Yes		10	11/	14.7/37.5	1.5	0.07/0.09	60	79/74	22¼	
	SR-3A	D	45/	0.1	0.1	20-20	89	150		Yes		10	11/	14.7/37.5	1.5	0.07/0.09	60	79/74	19	599.00
	SR-2A	D	30/	0.1	0.1	20-20	89	150		Yes		10	11/	14.7/37.5	1.5	0.07/0.09	60	79/74	18¾	449.00
NIKKO	NR-1050	D	100/175	0.03	0.03	10-30	88					20	7.3/35			0.1/0.2				
	NR-850	D	65/120	0.03	0.03	10-30	88					20	7.3/35			0.1/0.2			19⅞	
	NR-750	D	48/75	0.04	0.04	10-25	75					16	14/20			0.1/0.2			14¾	
	NR-650	D	38/65	0.05	0.05	10-25	75					16	14/20			0.1/0.2			13½	
	NR-350		32/50	0.05	0.05	15-20	75						14.2/35			0.1/0.2			12⅞	
ONKYO	TX-108(RI)	D	100/	0.02	0.02	20-20	76	200	1.3	Yes	No	16	10.3/17.2	14.7/37.2	1.3	0.1/0.18	70	76/70	33	800.00
	TX-88(RI)	D	80/	0.025	0.025	20-20	76	200	1.2	Yes	No	16	10.8/17.2	17.2/37.2	1.5	0.1/0.2	70	73/67	28	650.00
	TX-RV47(RI)	D	55/	0.08	0.08	20-20	73	150	1.2	Yes	Yes	16	11.2/17.2	17.2/37.2	1.5	0.15/0.3	55	71/66	21	500.00
	TX-38	D	55/	0.04	0.04	20-20	75	150	1.5	Yes	No	16	10.8/17.2	17.2/37.2	1.5	0.15/0.25	55	72/67	19	375.00
	TX-28	D	45/	0.08	0.08	20-20	75	150	1.2	Yes	No	16	11.2/17.2	17.2/37.2	1.5	0.15/0.3	55	71/66	17	290.00
	TX-18	D	30/	0.3	0.3	40-20	75	150	1.2	No	No	16	12.4/19.2	18.2/38.2	1.5	0.15/0.3	55	70/65	13	215.00
PARASOUND	DR65(RI)	D	65/100	0.04	0.015	20-40	88	200	2.0		No	12		15.3/39.2	1.6	0.1/0.2	68	80/77	23	479.95
	DR40	D	40/70	0.04	0.03	20-20	88	200	2.0		No	10		15.3/38.1	1.6	0.1/0.2	68	80/77	19	319.95
	DR25		25/40	0.04	0.03	20-20	88	180	2.0		No			15.8/39.2	1.6	0.15/0.25	66	80/77	16	219.95
PIONEER	VS-X5000(RI)	D	100	0.005	0.005	20-20	83	140		Yes	Yes	20	10.8/	15.3/37.1	1.0	0.08/0.15	65	80/75	22.1	569.95
	VS-X4000(RI)	D	60	0.007	0.005	20-20	73	140		Yes	Yes	20	10.8/	15.3/37.1	1.0	0.08/0.15	65	80/75	18.1	429.95
	SX-V300	D	45	0.08	0.08	20-20	72	140		Yes	No	8	10.8/	15.3/37.1	1.0	0.4/0.4	65	80/75	11.7	295.95
	SX-1500	D	45	0.3	0.3	40-20	72	130		No	No	20	11.2/	15.3/38.3		/0.5	55	78/75	9.8	219.95
	SX-1000	D	25	0.3	0.3	40-20	72	130		No	No	20	11.2/	15.3/38.3		/0.5	55	78/75	7.2	
PROTON	D940	D	40/75	0.02	0.008	20-20	92	250	6		No	16			1.5			83/74	18¾	449.00
	D930R(RO)	D	30	0.02	0.02	20-20	90		6		No	10			1.5	/0.2		/75		399.00
RCA	Dimensia	D	50	0.05	0.08	20-20	75	150		No	No	16	11.2/	19.2/38.2	1.0	0.13/0.15	45	73/69	16½	399.00
	MSR150(RI)																			
	MSR140(RI)	D	50	0.05	0.08	20-20	75	150		No	No	16	11.2/	19.2/38.2	1.0	0.13/0.15	45	73/69	16½	399.00
REALISTIC	STA-2600		100	0.01		15-25	70			Yes	No	12	9.8/		1.5	0.01/0.02	45	70/		500.00
	(31-3015)																			
	STA-2280		60	0.01		20-20	84			Yes	Yes	12	13.2/		1.0	0.01/0.02	45	70/		400.00
	(31-3006)																			
	STA-125		22	0.08		15-25	84			No	No	12	13.2/		2.0	0.03/0.06		72/		220.00
	(31-2064)																			
	STA-116		30	0.08		20-20	83			No	No	12	10.3/		1.5	0.01/	50	70/		260.00
	(31-2012)																			
	STA-460		22	0.08		20-20	85			No	No		14.1/		3	0.03/0.06	50	68/		
	(31-2100)																			
	STA-780	D	48/	0.08		20-20	84			No	No	12	10.8/		1.5	0.1/0.2	60	72/		350.00
	(31-2068)																			
	STA-870		65/	0.08		20-20	86				Yes	0	10.8/		1.5	0.1/0.2	53	72/		320.00
	(31-3001)																			
	STA-19		5/	0.9		40-20	70			No	No	0	22.1/					60/		120.00
	(31-1975)																			
REVOX	B285(RO)	D	70/90	0.03	0.03	20-20	80	50	3	No	No	29	12.8/	15.2/36.8	2	0.15/0.3		84/80	33½	1990.00
ROTEL	RX-830		20/30	0.08	0.08	20-20	60	90	2.5	Yes	No	0	10.8/		2	0.3/	62	70/	12.8	229.00
	RX-850		30/35	0.05	0.05	20-20	65	150	2.5	Yes	No	16	10.8/		1.5	0.15/	65	82/	15.2	399.00
	RX-870		60/115	0.03	0.03	20-20	81	185	2.65	Yes	No	16			1.0	0.07/	65	80/	22.7	649.00
SAE	R102	D	50/75	0.025	0.025	20-20	82	150	1.0	No	No	16	11.2/17.2	14.4/35.8	1.5	0.10/0.15	45	75/70	26	499.00
SANSUI	S-X1130	D/A	130/	0.005	0.005	20-20				Yes	No	16	10.3/	14.0/	1.0			80/	35.9	1150.00
	S-XV1000	D	80 & 8	0.01		20-20				Yes	Yes	16	10.8/	16.5/	1.0			75/	21.6	700.00
	S-X700	D	43/	0.08		20-20				Yes	No	16	10.8/	16.5/	1.0			75/	18	310.00
	S-X500	D	30/	0.2		30-20				Yes	No	16	10.8/	16.5/	1.0			75/	16.3	250.00
SCOTT	STA500	D	50	0.5	0.5	20-20	68			No	No	16	16.0/25.0			0.4/0.5		65/60		299.95
	STA1000(RI)	D	100	0.5	0.5	20-20	70			Yes	No	16	16.0/25.0			0.4/0.5		70/65		449.95
	STA1500(RI)	D	150	0.009		20-20	75			Yes	No	16	16.0/25.0			0.4/0.5		70/65		549.95
SHARP	SA-X35BK	F/D	35	0.5				100		Yes	No	12							10	199.95
	SA-X50AVBK	F/D	50	0.5				100		Yes	No	12							9.7	249.95

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RECEIVERS

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	FM Only = F, Digitally Synthesized = D, AM Stereo Capable = A	Average Watts per Channel, 8 Ohms/4 Ohms	AMPLIFIER SECTION: THD, %	IHF IM, %	Rated Power Bandwidth, Hz to kHz	MM Phono S/N, –dB; "A" Wtd. re: 5 mV	MM Phono Overload, mV	Dynamic Headroom, dB	Video Inputs?	Surround/Delay/Ambience Circuits?	Total Number of Memory Presets	TUNER SECTION: IHF Sensitivity, dBf, Mono/Stereo	Signal Strength for 50-dB Quieting, dBf, Mono/Stereo	Capture Ratio, dB	THD, %, 100% Modulation, 1 kHz, Mono/Stereo	Alternate Channel Selectivity, dB	Maximum S/N, –dB, Mono/Stereo	Weight, Lbs.	Price, $
SHERWOOD	S-2770RCP		74/	0.3		20-20	85	120		Yes	Yes	16	/19.8	14.8/36.1	1.5	0.1/0.5	70			500.00
	S-2750CP	D	55/	0.2		20-20	73	120		No	Yes	16	/11.2	19.2/39.2	2	0.21/0.5	65			300.00
	S-2730CP	D	35/	0.2		40-20	73	120		No	Yes	16	/11.2	19.2/39.2	2	0.21/0.5	65			250.00
SONY	STR-AV880(RI)	F/D	110/110	0.006	0.006	5-100	87	200	1.8	Yes	Yes	10	10.3/	16.1/38.3	1	0.05/0.1	65	82/76	21	650.00
	STR-AV780 (RO)	F/D	80/80	0.006	0.006	5-100	87	200	1.8	Yes	Yes	10	10.3/	16.1/38.3	1	0.05/0.1	65	82/76	18	550.00
	STR-AV580 (RO)	F/D	60/60	0.008	0.008	10-70	77	150	1.5	Yes	Yes	10	11.2/	17.3/38.3	1	0.15/0.25	60	80/74	17	430.00
	STR-AV480 (RO)	F/D	50/50	0.03	0.03	10-70	77	150	1.5	Yes	Yes	10	11.2/	17.3/38.3	1	0.15/0.25	60	80/74	16	330.00
	STR-AV380 (RO)	F/D	30/30	0.08	0.08	10-70	77	150		Yes	No	10	11.2/	17.3/38.3	1	0.15/0.25	60	80/74	13	240.00
TECHNICS	SA-130	D	35	0.5	0.5	40-20	73	120	1.0	No	No	0	10.8/	16.1/38.3	1.0		60	76/70	10.8	150.00
	SA-190	D	35	0.5	0.5	40-20	74	150	1.2	No	No	16	11.2/	20.2/40.2	1.0		65	75/71	9.7	190.00
	SA-290	D	50	0.3	0.3	20-20	74	150	1.2	No	No	16	11.2/	20.2/40.2	1.0		65	75/71	11.7	225.00
	SA-370(RI)	D	40	0.09	0.3	20-20	70	150	1.2	2	No	16	11.2/	20.2/40.2	1.0		65	75/71	11.7	300.00
	SA-390(RI)	D	50	0.007	0.01	20-20	70	150	1.2	2	Yes	16	11.2/	20.2/40.2	1.0		65	75/71	13.4	360.00
	SA-590	D	100	0.007	0.01	20-20	70	150	1.2	2	Yes	16	11.2/	20.2/40.2	1.0		65	75/71	17.4	600.00
ULTRX	R35	D	35/	0.03	0.03	40-20			5	Yes	No	14	14.14/17.23	21.45/39.17	1.5	0.2/0.4	70	70/60	15.7	119.95
	R55	D	55/	0.03	0.03	20-20			5	Yes	No	14	14.14/17.23	21.45/39.17	1.5	0.2/0.4	70	70/60	18.7	179.95
	R70	D	70/	0.03	0.03	20-20			5	Yes	No	40	14.14/17.23	21.45/39.17	1.5	0.2/0.4	70	70/65	22.1	299.95
	R100B	D	100/	0.009		20-20			5	Yes	No	40	14.14/17.23	21.45/39.17	1.5	0.2/0.4	70	70/65	26.5	359.95
VECTOR RESEARCH	VR-2200		20/25	0.08	0.08	20-20	80		2.0				10.8/	17.2/	1.2	0.15/0.3		75/70	13	149.95
	VRX-3500	D	30/40	0.08	0.08	20-20	80		2.5			16	10.8/	17.2/	1.2	0.15/0.3		75/70	17	249.95
	VRX-7100	D	40/60	0.08	0.08	20-20	80		3.0			16	10.2/	14.6/	1.0	0.08/0.1		80/75	17	349.95
	VRX-9100	D	60/100	0.08	0.08	20-20	80		3.0			16	10.2/	14.6/	1.0	0.08/0.1		80/75	23	449.95
YAMAHA	R-9(RI)	D	125	0.015	0.01	20-20 +0,-.3	92	110	1.58	Yes	No	16	8.8/	14.8/37.3	1.2	0.05/0.07	85	85/81	26½	849.00
	R-8(RI)	D	85	0.015	0.01	20-20 +0,-.3	92	110	1.84	Yes	No	16	8.8/	14.8/37.3	1.2	0.05/0.07	85	85/81	24¼	649.00
	R-7(RI)	D	65	0.015	0.01	20-20 +0,-.5	92	110	1.8	No	No	16	9.3/	15.1/37.7	1.2	0.05/0.07	85	85/81	13¾	499.00
	R-5	D	50	0.015	0.01	20-20 +0,-.5	88		1.76	No	No	16	9.3/	15.1/37.7	1.5	0.07/0.1	85	85/81	12¼	329.00
	R-3	D	35	0.04	0.04	20-20 +0,-.5	88		1.88	No	No	16	9.3/	15.1/37.7	1.5	0.1/0.2	85	81/76	11½	249.00

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SPEED CODE
A—33⅓
B—33⅓, 45
C—33⅓, 45, 78
D—Continuously Variable

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Speeds—See Code	Wow & Flutter, %, 33⅓ rpm, DIN 45-507	Rumble, –dB, DIN 45-539-B	Drive System	Speed Inaccuracy, ± %	Speed Adjustment Range, ± %	Controls Outside Dustcover?	Multi-Play? Number of Discs	Arm Type: Pivoted = P, Linear = L, Servo = S	Pivot-Stylus Distance, Inches	Auto Cue = C, Auto Return = R, Programmable Play = P	Recommended Tracking Force Range, Grams	Anti-Skating Adjustment?	Cartridge Weight Range, Grams	Total Cable Capacitance, pF	Cart. Mount: Fixed = F, Removable Shell = R, P-Mount = P, Changeable Wand = W	Dimensions, Inches, Including Dustcover	Price, $
										TONEARM/CARTRIDGE									
ADC	LT-60	B			Belt			Yes	No	L		C/R					P	14 x 19 x 4	140.00
	LT-34	B			Belt			Yes	No	L		C/R					P	13 x 13 x 4	100.00
	RC-1	B			Belt				4	P		C/R					P	15 x 17 x 5	100.00
ADS	P4(RO)	B	0.035	75	Direct	0.05	5	Yes	No	P	8¾	C/R	0-2	Yes	4-11	150	R	17½ x 14¼ x 4⅝	500.00
AKAI	AP-A50	B	0.045	70	Direct			Yes	No	L	6½	C/R	1.25	No	5.9		P	17⅜ x 4¼ x 15⅝	210.00
	AP-A301	B	0.05	65	Belt			Yes	No	L	6	C/R	1.25	No	5.9		P	17⅜ x 4 x 14¾	150.00
	AP-X1	B	0.05	70	Belt			Yes	No	P	8¾	R	1.25	No	5.9		P	17⅜ x 4 x 13⅝	100.00
ALPHASON	Sonata				Belt			Yes											1050.00
AR	ETL-1	B	0.03	81	Belt			No	No									20 x 17 x 7	700.00
	ES-1	B	0.04	78	Belt			No	No		8.5			Yes			F	18 x 15 x 7	350.00; w/Arm, 475.00
	EB-101	B	0.05	72	Belt			No	No	P	8.4			Yes			R	17 x 14 x 7	400.00
BANG & OLUFSEN	Beogram 8002	B	0.02	75	Eddy	0.02	3	Yes	No	L/S	6	C/R	1-1.5			100	F	19⅜ x 3½ x 14¾	699.00
	Beogram 5500	B	0.03	80	Belt	0.2		Yes	No	L/S	4¾	C/R	1-1.5			100	F	16½ x 3 x 12¾	399.00
	Beogram 3000	B	0.03	80	Belt	0.2		Yes	No	L/S	4¾	C/R	1-1.5			100	F	16½ x 3 x 12¾	380.00
	Beogram TX-2	B	0.03	80	Belt	0.2		Yes	No	L/S	9¼	C/R	1-1.5			100	F	16½ x 3 x 12¾	340.00
	Beogram 2000	B	0.035	75	Belt	0.2		Yes	No	P	9¼	C/R	1-1.5	Yes		100	F	16½ x 2½ x 17⅞	280.00
	Beogram RX-2	B	0.035	75	Belt	0.2		Yes	No	P	9¼	C/R	1-1.5	Yes		100	F	16½ x 2½ x 17⅞	219.00
MITCHELL A. COTTER	B-1D	C	0.02	98	Direct	0.001	9.9	Yes	No	P	12		2-8	Yes	3-30	250	R	20 x 25½ x 9	7900.00
	B-1M	C	0.02	98	Direct	0.001	9.9	Yes	No									33 x 22 x 38	14,000.
CURTIS MATHES	AP435	B	0.07	70	Belt			Yes	No	P	9⅛	R	1-1.5	No	1-1.5		P	17 x 14¾ x 3⅞	
DENON	DP-7F	B	0.018	75	Direct	0.01		Yes	No	P/S	8⅝	C/R	1.25	No			P	14⅜ x 3¾ x 14¼	180.00
	DP-23F	B	0.02	75	Direct	0.002		Yes	No	P/S	8⅝	C/R	0-3	No	4-9		R	17⅛ x 4⅛ x 14¼	250.00
	DP-35FB	B	0.012	78	Direct	0.002		Yes	No	P/S	8⅝	C/R	0-3	Yes	4-9		R	17⅛ x 5⅜ x 16¼	300.00
	DP-47F	B	0.010	78	Direct	0.01		Yes	No	P/S	8⅝	C/R	0-3	Yes	3-12		R	17 x 7½ x 16	400.00
	DP-61F	B	0.008	82	Direct					P/S	9¾	C/R	0-3	Yes	3-12		R	17⅞ x 5⅞ x 17½	600.00
	DP-59L	B			Direct		9.9	No	No	P/S	9¾	C/R	0-3	Yes	3-12		R		650.00
DUAL	CS5000	C	0.02	80	Belt	0.03		No	No	P		C	1.0-3.0	Yes	2-12	150	R	17½ x 18 x 5½	400.00
	CS-505-2	B	0.05	78	Belt	0.035	6	No	No	P		C	1.0-3.0	Yes	2.5-10	150	R	17¼ x 5¾ x 15¼	240.00
	CS530	B	0.06	75	Belt	0.035	6	Yes	No	P		C/R	1.0-3.0	Yes	2.5-10	150	R	17½ x 4½ x 14½	200.00
	CS515	B	0.07	72	Belt	0.045	6	Yes	No	P		C/R	1.0-3.0	Yes	2.5-10	150	R	17½ x 4½ x 14½	150.00
	CS514	C	0.07	72	Belt	0.05		Yes	No	P		C/R	1.0-3.0	Yes	2.5-10	150	F	17¼ x 4¾ x 14¼	130.00
	CS630Q	B	0.02	80	Direct	0.02	12	Yes	No	P		C/R	0.5-3.0	Yes	2.5-10	150	R	17½ x 4½ x 14½	250.00
	CS620Q	B	0.025	78	Direct	0.025	12	Yes	No	P		C/R	0.5-3.0	Yes	2.5-10	150	R	17¼ x 4¾ x 14¼	200.00
	CS616Q	B	0.025	75	Direct	0.025	12	Yes	No	P		C	0.5-3.0	Yes	2.5-10	150	R	17¼ x 4¾ x 14¼	180.00
	CS1258	B	0.025	73	Belt	0.05	6	Yes	6	P		C/R	0.5-3.0	Yes	2.5-9	150	R		220.00
EMT-FRANZ	EMT938	C	0.075	70	Direct	0.1	5	Yes	No	P	9¾		0-5	Yes			R	19.6 x 17.3 x 7.7	3365.00
	EMT948	C	0.075	70	Direct	0.1	5	Yes	No	P	9¾		0-5	Yes			R	18.3 x 18.9 x 9.4	4980.00
ENTEC	Granite	B	0.05	90	Direct	0.01	10	Yes										38 x 23 x 23	7000.00
HARMAN/KARDON	T65	B	0.025	70	Belt		3	Yes	No	P	8½	C	1-3	Yes	4.5-13	Sel.	R	17⅜ x 5¾ x 15⅛	575.00
HEYBROOK	TT-2	B	0.08	79	Belt	0.10	0	No										6¼ x 17½ x 14¼	398.00; w/Arm, 479.95

SOTA Star, SME V, Sumiko Virtuoso: Back To The Future

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Analog Perfectibility

The Black SOTA Star Turntable, SME Series V Tonearm, and the Sumiko Virtuoso Cartridge.

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TURNTABLES

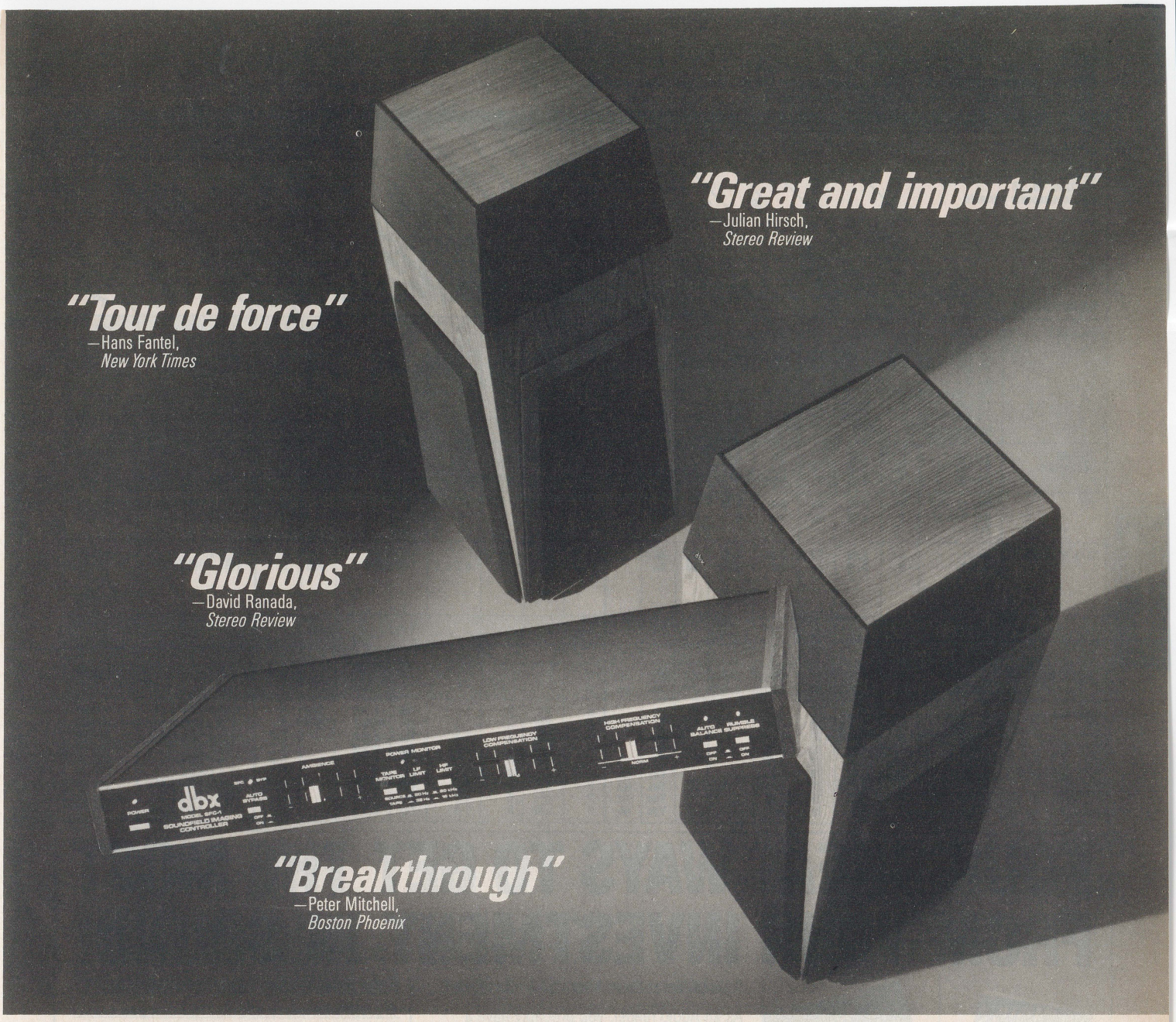
SPEED CODE
A—33⅓
B—33⅓, 45
C—33⅓, 45, 78
D—Continuously Variable

MANUFACTURER	Model (RI)=Remote Included, (RO)=Remote Optional	Speeds—See Code	Wow & Flutter, %, 33⅓ rpm, DIN 45-507	Rumble, –dB, DIN 45-539-B	Drive System	Speed Inaccuracy, ±%	Speed Adjustment Range, ±%	Controls Outside Dustcover?	Multi-Play? Number of Discs	Arm Type: Pivoted=P, Linear=L, Servo=S	Pivot-Stylus Distance, Inches	Auto Cue=C, Auto Return=R, Programmable Play=P	Recommended Tracking Force Range, Grams	Anti-Skating Adjustment?	Cartridge Weight Range, Grams	Total Cable Capacitance, pF	Cart. Mount: Fixed=F, Removable Shell=R, P-Mount=P, Changeable Wand=W	Dimensions, Inches, Including Dustcover	Price, $
TONEARM/CARTRIDGE																			
HITACHI	HTL303UTB	B	0.045		Belt	0.005		Yes	No	P/L		C/R					P	17⅛ x 3⅛ x 12⅝	180.00
JVC	AL-L20R	B	0.045	78	Direct	0.005		Yes		P/L/S		C/R	1.25		5.9		P	17⅛ x 14⅛ x 3⅞	
	AL-FQ5BKX	B	0.05	78	Direct	0.005		Yes		P	8⅝	C/R	1.25	Yes	5.9		P	17⅛ x 14⅛ x 4⅛	
	AL-F3BKX	B	0.055	78	Direct		3	Yes		P	8⅝	C/R	1.25	Yes	5.9		P	17⅛ x 14⅛ x 4¼	
	AL-A1BKX	B	0.07	65	Belt			Yes		P	8⅝	R	1.25		5.9		P	17⅛ x 14⅛ x 4¼	
KENWOOD	KD-75F(RO)	B	0.05	75	Direct			Yes	No	L		C/P		No			P	16½ x 14⅛ x 4	225.00
	KD-65F(RO)	B	0.05	75	Direct			Yes	No	L		C/R		No			P	16½ x 14⅛ x 4	190.00
	KD-55R	B	0.05	74	Belt			Yes	No	P		R		No			P	16½ x 14⅜ x 4⅝	117.00
	KD-35R	B	0.07	70	Belt			Yes	No	P		R		No			P	16½ x 14⅜ x 4⅝	107.00
KYOCERA	PL-701	B	0.03	70	Belt		3	Yes		P	8½	C/R	0-3	Yes	3-10	190	R	18⅛ x 6 x 15⅜	450.00
	PL-601	B	0.035	68	Belt		3	Yes		P	8½	C	0-3	Yes	3-10	190	R	18⅛ x 6 x 15⅜	350.00
	PL-910	B	0.025	78	Belt		3	Yes										18 x 7½ x 15¼	2000.00
LINN	Linn Sondek LP12	A	0.04	75	Belt	0.1	0	No	No									17½ x 14 x 9⅞	895.00
	Axis	B	0.05	75	Belt	0.1	0	No	No	P	9		0.75-3	Yes	2-10	100	R	17½ x 13¾ x 5½	575.00
LUXMAN	P406	B	0.04	70	Belt		3	Yes	No	L		C/R	1.25	No	6		P	16⅜ x 4½ x 14⅛	350.00
	P102	B	0.04	70	Belt		3	Yes	No	L		C/R	1.25	No	6		P	16⅜ x 4½ x 14⅛	350.00
	P100	B	0.06	72	Belt		3	Yes	No	P		C/R	0.5-3	Yes	3-8.5		R	16⅜ x 4¾ x 14⅞	250.00
MARANTZ	TT151	B	0.1	60	Belt			Yes	No	P		C/R	1.25	Yes			P	4⅜ x 16½ x 13¾	130.00
	TT251	B	0.07	68	Direct		6	Yes	No	P		C/R	1.25	Yes			P	4 x 16½ x 13¼	180.00
	TT451	B	0.05	70	Belt			Yes	No	L		C/R	1.25	Yes			P	3¾ x 16⅜ x 13½	250.00
MERRILL AUDIO	R.T.	B	0.02	80	Belt	0.05	Opt	Opt										19 x 15 x 8	839.00
	U.T.	B	0.02	80	Belt	0.05	Opt	Opt										19 x 15 x 8	950.00
J. A. MICHELL	Focus One	B	0.05	75	Belt	0.1	No	No	No									17¼ x 14¾ x 5¼	390.00
	Focus 'S'	B	0.05	76	Belt	0.1	No	No	No									17¼ x 14¾ x 8¼	499.00
	Syncrodec	B	0.05	76	Belt	0.1	No	No	No									18 x 17½ x 5½	650.00
	Gyrodec	B	0.04	78	Belt	0.1	No	No	No									21¼ x 16¾ x 7½	1190.00
MICRO SEIKI	BL-10X	B	0.025	75	Belt	0.02	3	No	No	P	8¾		0-2	Yes	4-9		W	17¾ x 13⅞ x 6⅜	695.00
	BL-99V	B	0.025	75	Belt	0.02	3	No	No	P								21½ x 17½ x 7½	1195.00
	BL-99VW	B	0.025	75	Belt	0.02	3	No	No	P	9⅜		0-2.5	Yes	9-17		R	21½ x 17½ x 7½	1595.00
	SX-555FVW	B	0.025	78	Belt	0.02	3	No	No	P								21½ x 17½ x 7½	1995.00
	SX-111FV	B	0.025	84	Belt	0.02	3	No	No	P								21½ x 16 x 9	2995.00
	DDX-1500	B	0.03	60	Direct	0.02	3	No	No									13 x 13 x 5½	995.00
	RX-1500 Basic	B	0.03	65	Belt	0.02	3	No	No									13 x 13 x 5½	1195.00
	RX-1500 VG	B	0.025	78	Belt	0.02	3	No	No									13 x 13 x 5½	1995.00
	RX-1500 FVG	B	0.025	84	Belt	0.02	3	No	No									13 x 13 x 5½	2995.00
	SX-5000MKII	B	0.025	84	Belt	0.02	3	No	No									12½ x 12½ x 6	7500.00
	SX-8000MKII	B	0.025	84	Belt	0.02	3	No	No									12½ x 12½ x 5½	10,000.
	SZ-1TVG	B	0.023	88	Belt	0.02	3	No	No									19½ x 17½ x 7¾	10,000.
	SZ-1TS/S	B	0.023	88	Belt	0.02	3	No	No									19½ x 17½ x 7¾	12,000.
	SZ-1T Ultimate	B	0.023	88	Belt	0.02	3	No	No									19½ x 17½ x 7¾	15,000.
MRM AUDIO	Source	B	0.01	88	Belt	0.007												19 x 16 x 8½	1995.00
NIKKO	NP-750	B	0.05		Direct			Yes		L		P	1.5	No			P	16.4 x 3.7 x 13.6	
	NP-550	B	0.07		Belt			Yes		P		R	1.5	Yes			P	16.4 x 3.9 x 13.3	
NUMARK	TT3000	B	0.007	78	Direct	0.01	8		1	P	9		1-6	Yes	4-15		R	17⅞ x 14⅜ x 5	
	TT2400	B	0.007	78	Direct	0.01	8		1	P	9		1-6	Yes	4-15		R	17⅞ x 14⅜ x 5	
	TT1600	B	0.007	78	Direct	0.01	8		1	P	9		1-6	Yes	4-15		R	17⅞ x 14⅜ x 5	
	TT1400	B	0.007	78	Direct	0.01	8		1	P	9		1-6	Yes	4-15		R	17⅞ x 14⅜ x 5	
ONKYO	CP-1057(RO)	B	0.023	80	Direct			Yes		P		C/R		Yes			R	17⅜ x 6¼ x 16⅛	330.00
	CP-1046(RO)	B	0.025	75	Direct			Yes		P		C/R		Yes			R	16½ x 5¼ x 14¾	220.00
	CP-1036	B	0.025	70	Direct			Yes		P		R		Yes			R	16½ x 5¼ x 14¾	170.00
	PL-25	B	0.027	72	Direct			Yes		L		C/R		Yes			P	16½ x 5 x 15⅜	220.00
	CP-1007	B	0.045	66	Belt			Yes		P		R		Yes			R	16½ x 5¼ x 14¾	105.00
ORACLE	Alexandria Mark II	B			Belt		3	No		P/L								19 x 5⅝ x 14½	850.00
	Delphi Mark II	B			Belt		3	Yes		P/L								19 x 6¼ x 14½	1250.00
	Premiere Mark II	B			Belt		3	Yes		P/L								19⅜ x 6½ x 14¾	2350.00
PARASOUND	LTd900	B	0.02	70	Direct	0.02	3	No	No	L		R/P	1.25		5.9	180	P	16¼ x 13 x 3¾	229.95
	TTd820	B	0.03	70	Direct	0.02	3	Yes	No	P	8¾	R	1.25	Yes	5.9	180	P	16½ x 14¼ x 4¼	169.95
	TTb720	B	0.05	65	Belt	0.04	3	Yes	No	P	8½	R		No	5.9	180	P	16 x 12¾ x 3¾	129.95
PINK TRIANGLE	Pink Triangle	B	0.06	78	Belt	0.09	3											18 x 14 x 6	895.00
PIONEER	PL-L30	B	0.045	72	Belt			No	1	L/S	3¾	C/R		Yes	Fixed		R/P	16⅝ x 4¼ x 14⅜	134.95
	PL-3F	B	0.025	80	Direct			Yes	1	P	9¼	C/R		Yes	3-8.5		R/P	18⅛ x 6¾ x 16⅛	299.95
	PL-670	B	0.025	78	Direct			No	1	P/S	8¾	C/R					R/P	16⅝ x 4⅝ x 14⅜	139.95
	PL-570	B	0.05	68	Belt			No	1	P/S	8¾	C/R					R/P	16⅝ x 3⅞ x 14¾	
	PL-V70	B	0.06	70	Belt			No	1	L		C/R/P					R	16⅝ x 4⅛ x 13¾	300.00

TURNTABLES

SPEED CODE
A—33⅓
B—33⅓, 45
C—33⅓, 45, 78
D—Continuously Variable

MANUFACTURER	Model (RI)=Remote Included, (RO)=Remote Optional	Speeds—See Code	Wow & Flutter, %, 33⅓ rpm, DIN 45-507	Rumble, –dB, DIN 45-539-B	Drive System	Speed Inaccuracy, ±%	Speed Adjustment Range, ±%	Controls Outside Dustcover?	Multi-Play? Number of Discs	TONEARM/CARTRIDGE: Arm Type: Pivoted=P, Linear=L, Servo=S	Pivot-Stylus Distance, Inches	Auto Cue=C, Auto Return=R, Programmable Play=P	Recommended Tracking Force Range, Grams	Anti-Skating Adjustment?	Cartridge Weight Range, Grams	Total Cable Capacitance, pF	Cart. Mount: Fixed=F, Removable Shell=R, P-Mount=P, Changeable Wand=W	Dimensions, Inches, Including Dustcover	Price, $
QED	R232	B	0.1	68	Belt		No	No	No	P		No		Yes	2.5		F	15¾ x 13¾ x 4	375.00
	R232EN	B	0.1	68	Belt		No	Yes	No	P		No		Yes	2.5		F	15¾ x 13¾ x 4	475.00
QUASAR	CL7014XE	B	0.045	70	Belt	0.06		Yes	No	P	7.9	C/R	1.0-1.5	No			P	12½ x 3⅛ x 12½	79.95
RCA	Dimensia MTT 130(RO)	B	0.025		Direct	0.003		Yes	No	L	3¾	C/R	1.25	No	5.9	140	P	12⅜ x 3¼ x 12⅜	249.00
	MTT 131(RO)	B	0.035		Direct	0.003		Yes	No	L	3¾	C/R	1.25	No	5.9	140	P	12⅜ x 3¼ x 12⅜	249.00
	Dimensia MTT 135(RO)	B	0.025		Direct	0.003		Yes	No	L	3¾	C/R/P	1.25	No	5.9	140	P	12⅝ x 5 x 14¼	349.00
REALISTIC	LAB-2200 (42-2916)	B	0.065	62	Direct		3	Yes	No	L		C/R	1.5				P	4 x 13½ x 13⅞	140.00
	LAB-330 (42-2917)																		80.00
	LAB-89 (42-2986)	B											1.5						80.00
	LAB-1600 (42-2905)	B	0.05	65	Belt			Yes	No	L		C/R	1-1.5				P	13⅜ x 4½ x 13¾	160.00
	LAB-430 (42-2914)	B	0.05	70	Direct		4.5	Yes	No	P		C/R	1.75-2.25	Yes	4-8		P	5 x 15 x 14	130.00
REGA RESEARCH	Planar 2	B			Belt					P	9⅜			Yes	3-18		F	17½ x 14⅜ x 4⅞	360.00
	Planar 78	†			Belt					P	9⅜			Yes	3-18		F	17½ x 14⅜ x 4⅞	360.00; †78 rpm only
	Planar 3	B			Belt					P	9⅜			Yes	3-18		F	17½ x 14⅜ x 4⅞	499.00
REVOLVER	Revolver w/Linn Basik Arm & Basik III Cart.	B	0.08	65	Belt	0.02		No	No	P	9		0.75-3.0	Yes	2.0-10.0	100	R	16½ x 14½ x 4¼	500.00
	Revolver w/Revolver Arm & Audio-Technica AT93 Cart.	B	0.08	65	Belt	0.02		No	No	P	9		0.75-3.0	Yes	2.0-10.0	45	F	16½ x 14½ x 4¼	400.00
REVOX	B291(RO)	B	0.05	77	Direct	0.01	9.9	Yes	No	L/S	1½	C/R	0.8-2.0		2.5-10	220	F/P	17½ x 15½ x 5½	950.00
	B791	B	0.05	77	Direct	0.01	9.9	Yes	No	L/S	1½	C/R	0.8-2.0		2.5-10	220	F/P	17½ x 15½ x 5½	825.00
ROTEL	RP-850	B	0.03	70	Belt			No	No	P			1-3	Yes	3-10	240	F	17 x 5⅜ x 13¾	399.00
	RP-830	B	0.03	70	Belt			No	No	P			1-3	Yes	3-10	240	F	17 x 5⅜ x 6⅜	289.00
SANSUI	XP-99	B	0.012	78	Direct			Yes	No	P		C/R/P					R	17 x 16½ x 6¾	500.00
	P-L95R	B	0.08	72	Direct			Yes	No	L		C/R/P					F	17⅛ x 14 x 5	475.00
	P-L75	B	0.035	72	Direct			Yes	No	L		C/R/P					F	17 x 14¾ x 3¾	330.00
	P-E750	B	0.04	72	Direct			Yes	No	L		C/R/P					F	15 x 14 x 3⅛	270.00
	P-L45	B	0.035	72	Direct			Yes	No	L		C/R/P					P	17 x 14¾ x 3¾	210.00
	P-L35	B	0.035	72	Direct			Yes	No	L		C/R/P					P	17 x 14¾ x 3¾	200.00
	P-E350	B	0.06	72				No	No	L		C/R/P					P	15 x 14 x 3⅛	200.00
	P-D15	B	0.04	72	Direct			Yes	No	P		C/R					P	17 x 14½ x 3¾	155.00
SHERWOOD	ST-877	B	0.055		Direct		3	Yes	No	P		R	2	Yes			R/P	17⅜ x 4⅞ x 14¼	200.00
	ST-875	B	0.08		Belt			Yes	No	P		R	2	Yes			R/P	17⅜ x 4⅞ x 14¼	150.00
SONOGRAPHE	SG3	B	0.1	65	Belt			No	No									18 x 14½ x 6¾	395.00
SONY	PS-FL7IIB (RO)	B	0.03	75	Direct	0.003		Yes	No	L	3	C/R	1.5	No			P	17 x 15 x 4	270.00
	PS-LX520 (RO)	B	0.035	75	Direct	0.003		Yes	No	L	3	C/R	1.5	No			P	17 x 14½ x 3¾	200.00
	PS-LX430 (RO)	B	0.045	70	Belt			Yes	No	P	8½	C/R	1.75	Yes			P	17 x 14 x 4½	165.00
	PS-LX230	B	0.045	70	Belt			Yes	No	P	8½	C	1.75	Yes			P	17 x 14 x 4½	130.00
SOTA	Sapphire	C	0.03	88.2	Belt	0.02	5	No	No									20¼ x 16½ x 7½	895.00
	Sapphire Vacuum	C	0.03	88.2	Belt	0.02	5	No	No									20¼ x 16½ x 7½	1495.00
	Star Acrylic	C	0.03	88.2	Belt	0.02	5	No	No									20¼ x 16½ x 7½	1600.00
TECHNICS	SP-10MK3	C	0.015	92 dBA	Direct	0.001	9.9	Yes	No									14½ x 4½ x 14½	1700.00
	SP-10MK2A	C	0.025	78	Direct			No	No									14½ x 4 x 14½	1100.00
	SP-15	C	0.025	78	Direct		9.9	No	No									13¾ x 3⅝ x 14⅝	700.00
	SP-25	B	0.025	78	Direct		6	No	No									13¾ x 3¼ x 14⅝	400.00
	SL-1200MK2	B	0.025	78	Direct		8	No	No	P	9⅛		0-2.5	Yes	3-9.5		R	17⅞ x 6¼ x 14¼	400.00
	SL-M3	B	0.008	82	Direct	0.002	6	No	No	L	9⅜	C/R	1.25		6		P	20¾ x 8⅛ x 15¾	450.00
	SL-M2	B	0.031	82	Direct	0.002	6	Yes		P	9⅛		1-1.5	Yes	6		P	17⅞ x 6¾ x 16¼	400.00
	SL-MA1	B	0.025	81	Direct	0.002		Yes		P/S	9⅛	C/R	0-2	Yes	6		P	17⅞ x 6¾ x 16⅛	350.00
	SL-L20K(RO)	B	0.045	70	Belt			Yes	No	L/S	4⅛	C/R	1.25	No	6		P	17 x 13¾ x 3¾	179.00
	SL-J11D	B	0.045	70	Belt			Yes	No	L/S	4⅛	C/R	1.15	No	6		P	12⅜ x 12⅜ x 3½	175.00
	SL-J33K(RO)	B	0.025	78	Direct	0.002		Yes	No	L/S	4⅛	C/R/P	1.25	No	6		P	12⅜ x 12⅜ x 3½	220.00
	SL-L92	B	0.025	78	Direct	0.002		Yes		L/S	4⅛	C/R	1.25	No	6		P	17 x 13¾ x 3½	235.00
	SL-BD10	B	0.045	70	Belt			Yes	No	P	9⅛		1.25	No	6		P	17 x 14¾ x 3⅝	95.00
	SL-BD20A	B	0.045	70	Belt			Yes	No	P	9⅛	R	1.25	No	6		P	17 x 14¾ x 3⅝	105.00
	SL-BD1K	B	0.045	70	Belt		6	Yes	No	P	9⅛		1.25	No	6		P	17 x 14¾ x 3⅝	115.00
	SL-BD22K	B	0.045	70	Belt		6	Yes	No	P	9⅛	R	1.25	No	6		P	17 x 14¾ x 3⅝	115.00
	SL-QD22	B	0.025	78	Direct			Yes	No	P	9⅛	R	1.0-1.5	No	6	90	P	17 x 14¾ x 3⅝	150.00
	SL-QD33(RO)	B	0.025	78	Direct			Yes	No	P	9⅛	C/R	1.0-1.5	No	6	90	P	17 x 14¾ x 3⅝	165.00
	SL-D500	B	0.02	75	Direct		10	Yes	6	P	9⅛	C/R	1.25	Yes	6		P	17 x 14¾ x 7¼	260.00



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SPEED CODE
A—33⅓
B—33⅓, 45
C—33⅓, 45, 78
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MANUFACTURER	Model (RI)=Remote Included, (RO)=Remote Optional	Speeds—See Code	Wow & Flutter, %, 33⅓ rpm, DIN 45-507	Rumble, –dB, DIN 45-539-B	Drive System	Speed Inaccuracy, ±%	Speed Adjustment Range, ±%	Controls Outside Dustcover?	Multi-Play? Number of Discs	Arm Type: Pivoted=P, Linear=L, Servo=S	Pivot-Stylus Distance, Inches	Auto Cue=C, Auto Return=R, Programmable Play=P	Recommended Tracking Force Range, Grams	Anti-Skating Adjustment?	Cartridge Weight Range, Grams	Total Cable Capacitance, pF	Cart. Mount: Fixed=F, Removable Shell=R, P-Mount=P, Changeable Wand=W	Dimensions, Inches, Including Dustcover	Price, $
									TONEARM/CARTRIDGE										
THORENS	TD 316	B	0.04	70	Belt	0.2		No	No	P	9⅛		1-3	Yes	3-8	150	F	17⅜ x 13¾ x 6¾	260.00
	TD 318	B	0.04	70	Belt	0.2		No	No	P	9⅛	C	1-3	Yes	3-8	150	F	17⅜ x 13¾ x 6¾	350.00
	TD 320	B	0.035	72	Belt	0.2		No	No	P	9⅛	C	1-3	Yes	3-8	100	F	17⅜ x 13¾ x 6¾	500.00
	TD 126 MKIII C	C	0.035	72	Belt	0.1	6	No	No	P	9	C	1-3	Yes	3-8	190	W	19⅞ x 15½ x 6¾	800.00
	Phantasie	B	0.035	72	Belt	0.2		No	No	P	9⅛	C	1-3	Yes	3-8	100	F	17⅜ x 13¾ x 6¾	1200.00
	TD 321	B	0.035	72	Belt	0.2		No	No									17⅜ x 13¾ x 6¾	395.00
	TD 126 MKIII B	C	0.035	72	Belt	0.1	6	No	No									19⅞ x 15½ x 6¾	645.00
VECTOR RESEARCH	VT-160	B	0.08	63	Belt	0.02		Yes	No	P	8¼	R	1.25	Yes	1.25		P	16⅜ x 13½ x 4	99.95
	VT-240	B	0.05	70	Belt		3	Yes		P	8½	C/R	1.25	Yes	1.25		P	16¾ x 14½ x 4½	149.95
	VT-300	B	0.04	75	Direct		3	Yes		L		C/R	1.25	No	1.25		P	16¼ x 13⅝ x 3¾	249.95
VPI	HW 19-MKII	B	0.05	80	Belt	0.05	0											21¼ x 16⅝ x 7	885.00
	HW 19-MKII-PLC	D	0.03	82	Belt	0	10											21¼ x 16⅝ x 7	1185.00
C. J. WALKER	CJ-61	B	0.06	77	Belt	0.02	No	No										12 Dia.	179.00
	CJ-58II	B	0.06	77	Belt	0.02	No	No		P	9		0.5-3.0	Yes	3-12	100	R	18¾ x 14½ x 6	289.00; w/Arm & Cart., 587.00
WELL TEMPERED LAB	Well Tempered Table	B			Belt			No	1	P	9			Yes			F	19 x 15 x 8	725.00; w/Arm, 1250.00
WIN RESEARCH	SEC-10	B	0.001	80	Direct	0.001	9.9	Yes	No										3000.00
	SW-10	B	0.001	85	Direct	0.001	9.9	Yes	No										1250.00
YAMAHA	PF-1000	B	0.023	80	Belt		6	No		P	8¾	R	1-3	Yes	2.5-9	110	R	18⅝ x 14¾ x 6⅛	649.00
	PF-800	B	0.028	80	Belt		6	No		P	8¾	R	1-3	Yes	2.5-9	110	R	18⅝ x 14¾ x 6⅛	499.00
	PF-50	B	0.015	78	Direct			No		P	8¾	C	1-3	Yes	2.5-9		R/P	17⅛ x 14 x 4⅜	219.00
	PF-30	B	0.04	72	Belt			No		P	8¾	C	1-3	Yes	2.5-9		R/P	17⅛ x 14 x 4⅜	169.00
	PF-20	B	0.04	72	Belt			No		P	8¾	R	1-3	Yes	2.5-9		R/P	17⅛ x 14 x 4⅜	139.00
	P-530	B	0.03	78	Direct			Yes	No	P	9	C	1-1.5	No	6		P	17 x 14¾ x 4	239.00
	P-520	B	0.015	78	Direct		3	Yes	No	P	8¾	C	1-3	Yes	2.5-9		R/P	17⅛ x 14⅞ x 4¾	219.00
	P-320	B	0.04	78	Belt			Yes	No	P	8¾	C	1-3	Yes	2.5-9		R/P	17⅛ x 14⅞ x 4¾	169.00
	P-220	B	0.04	70	Belt			Yes	No	P	8¾	R	1-3	Yes	2.5-9		R/P	17⅛ x 14⅞ x 4¾	139.00

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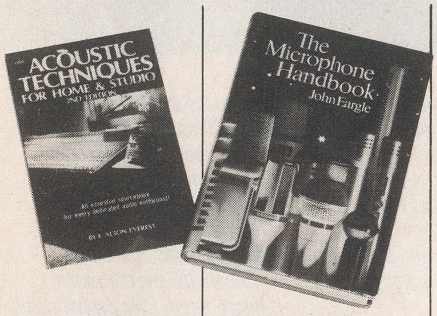

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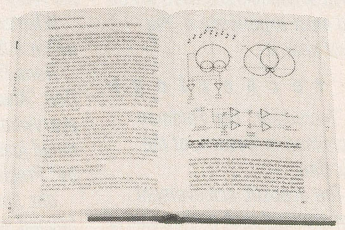

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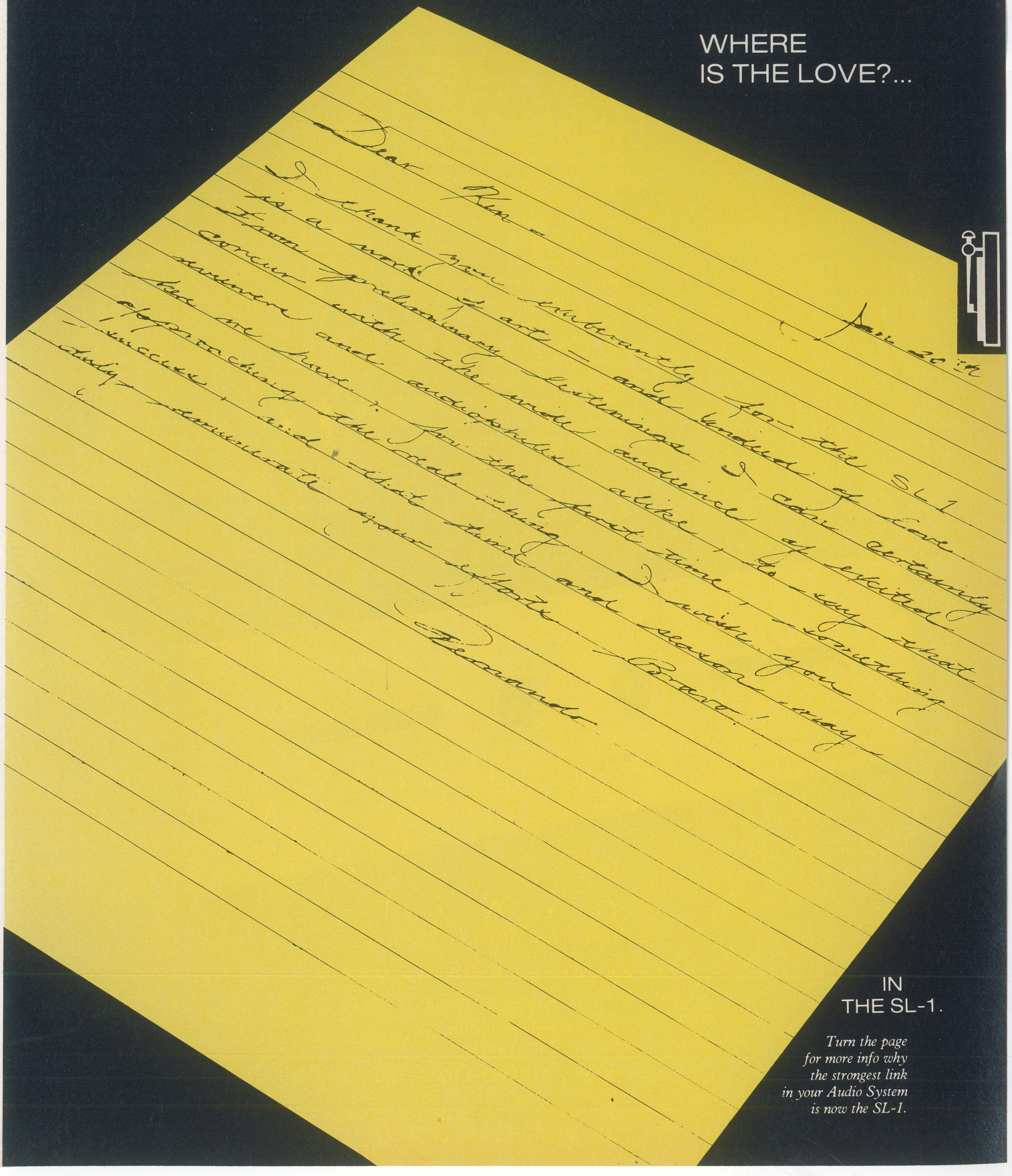

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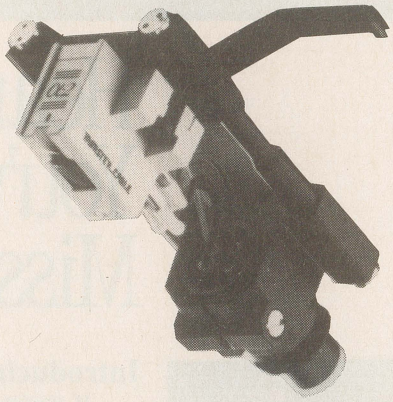
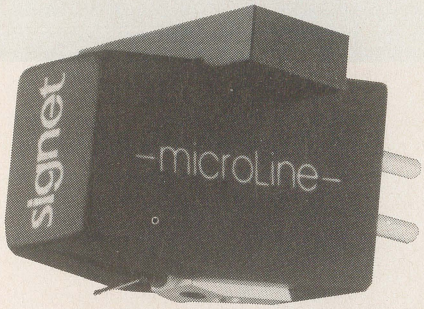
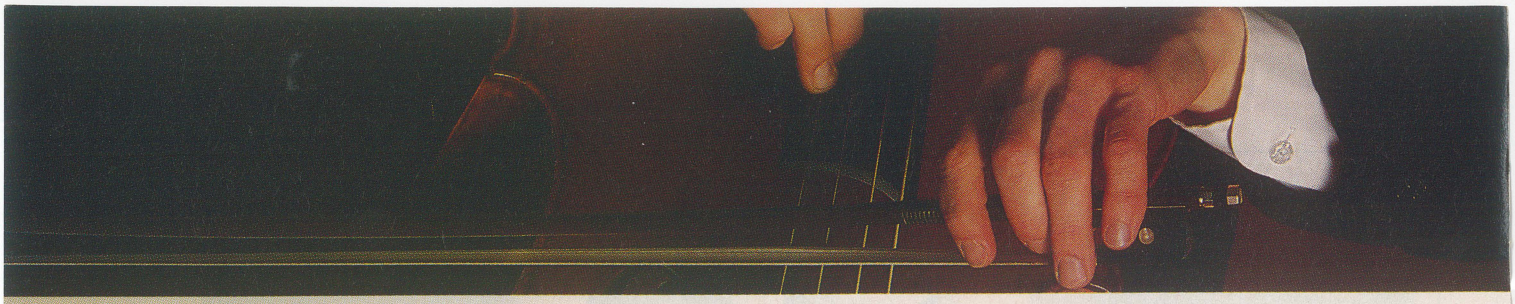




SIGNET TK10ml SERIES II

STYLUS TYPE
C—Conical
S—Spherical
E—Elliptical
M—MicroLine, MicroRidge, or similar
V—Van den Hul
X—Hyper-Elliptical,
Stereohedron, Fine Line,
Line Contact, Long Line,
Line Trace, or similar

MANUFACTURER	Model	Frequency Response, Hz to kHz, ±dB	Principle: Moving Iron = MI, Induced Magnet = IM, Moving Coil = MC, Moving Magnet = MM	Individual Response Curve Supplied?	Channel Separation, 1 kHz, dB	Channel Separation, 10 kHz, dB	Output, mV, 1 kHz, 5 cm/Sec. rms Lateral Velocity	Recommended Tracking Force Range, Grams	Recommended Load Capacitance, pF	Stylus Type—See Code	Stylus Radius (Radii), Mils	Dynamic Compliance, µm/mN, Vertical/Lateral	Stylus Replacement: User = U, Factory = F	Mounting: Integral Shell = I, P-Mount = P, Standard = S	Weight, Grams	Price, $	Replacement Stylus Price, $
ADC	PSX40	20-24 ±1	IM	No	25			1-1.5	200	E	0.3 x 0.7		U	P/S		135.00	68.00
	PSX30	20-22 ±1	IM		25			1-1.5		E	0.3 x 0.7		U	P/S		110.00	55.00
	PSX20	20-24 ±1.5	IM		25			1-1.5		E	0.3 x 0.7		U	P/S		90.00	45.00
	PSX10	20-20 ±1.5	IM		20			1-1.5		C	0.7		U	P/S		60.00	30.00
	TRX3	20-20 ±0.5	IM	Yes	35	25	3	1-1.25	150	E	0.12 x 0.06	40/	U	S	8	300.00	99.00
	TRX1	20-20 ±0.5	IM	Yes	30	25	3	1-1.25	150	E	0.14 x 0.08	40/	U	S	8	200.00	89.00
ADCOM	HC-E II	20-20 +2.5,-1	MC		22	22	2.3	1.6-2.0		E	0.3 x 0.7		F	S	4.7	140.00	77.00
	HP-E II	20-20 +2.5,-1	MC		22	22	2.3	1.25		E	0.3 x 0.7		F	P		140.00	77.00
	HC-vdH II	20-20 +2.5,-1	MC		22	22	2.3	1.6-2.0		V	0.2 x 2.8		F	S	4.7	220.00	121.00
	XC-LT II	20-20 ±1	MC		25	25	2.3	1.6-2.0		X	0.15 x 1.5		F	S	4.7	260.00	143.00
	XC-MR II	20-20 ±1	MC		25	25	2.3	1.6-2.0		M	0.15 x 3.0		F	S	4.7	325.00	179.00
	SXC-vdH	20-20 +3,-1	MC		25	25	2.3	1.8		V	0.15 x 3.3		F	S	4.7	450.00	248.00
ANDANTE	FGV	12-40	MM	No	30	25	5.0	1.3-2.3	100	V		20/20	U	S	6	200.00	100.00
	E	12-30	MM	No	30	25	5.0	1.0-2.5	100	E	0.2 x 0.8	18/18	U	S	6	100.00	60.00
	S	18-27	MM	No	28	23	5.0	1.0-2.5	100	S	0.5	18/18	U	S	6	75.00	37.50
	HSP	18-25	MM	No	27	22	6.0	1.0-2.0	100	E	0.2 x 0.7	18/18	U	S	6	65.00	37.50
	H	18-25	MM	No	27	22	10.0	1-2.5	100	S	0.5	15/15	U	S	6	55.00	27.50
	P-76	8-45	MM	No	30	25	2.5	1.0-1.5	100	X			U	P	5.9	175.00	105.00
	P-38	10-35	MM	No	28	23	2.5	1.0-1.5	100	E	0.3 x 0.8		U	P	5.9	125.00	75.00
APATURE	Koce	15-40	MC		25		3.2	1.75-2.25		X	0.2 x 0.7	10/10	U/F	S	4.2	200.00	100.00
	Maui	15-40	MC		20		3.0	1.75-2.25		E	0.3 x 0.7	10/10	U/F	S	4.2	100.00	50.00
	Panama	20-20	MM		20		4.0	1.25-1.75	200-500	E		25/25	U	P/S	6	60.00	29.95
ARGENT	Diamond	10-50	MC	Yes	30	25	0.2	1.8-2.2	100	X	0.3 x 0.6	8/	F	S	8	1200.00	600.00
	MC-110	10-50	MC	Yes	30	25	0.2	1.8-2.2	100	X	0.3 x 0.6	8/	F	S	8	385.00	190.00
	MC-300	10-40	MC	Yes	25	20	0.1	1.8-2.2	100	X	0.3 x 0.6	8/	F	S	7	200.00	100.00
	MC-310	10-40	MC	Yes	25	20	0.1	1.8-2.2	100	E	0.3 x 0.7	8/	F	S	7	175.00	95.00
	MC-500H	10-40	MC	Yes	25	20	1.9	1.8-2.2	100	X	0.3 x 0.6	8/	F	S	7	200.00	100.00
	MC-500HS	10-50	MC	Yes	25	20	1.9	1.8-2.2	100	X	0.3 x 0.6	8/	F	S	7	260.00	130.00
	MC-500HR	10-50	MC	Yes	25	20	1.9	1.8-2.2	100	X	0.3 x 0.6	8/	F	S	7	300.00	150.00
ASTATIC	MF-100-MR	10-20 ±1	Moving Flux	No	30	25	3.5	1-1.5	100	M	Parabolic		U	S	5.5	320.00	147.50
	MF-100	10-20 ±1	MF	No	30	25	3.5	1-1.5	100	X	Parabolic	/50	U	S	5.5	290.00	133.75
	MF-200	10-20 ±2	MF	No	28	20	4.2	1.5-2	100	X	Parabolic	/45	U	S	5.5	160.00	80.00
	MF-300	10-20 ±2.5	MF	No	25	18	4.2	1.5-2	100	E	0.3 x 0.7	/35	U	S	5.5	100.00	50.00
	MF-400	10-18 ±3	MF	No	22	18	4.2	1.5-2.5	100	S	0.5	/35	U	S	5.5	80.00	40.00
	IM10	10-15 ±3	IM	No	20	12	4.2	2.0-2.5	47	S	0.5	/30	U	S	7.5	40.00	25.00
	IM10E	10-15 ±2.5	IM	No	22	15	4.2	2.0-2.5	47	E	0.3 x 0.7	/30	U	S	7.5	51.00	35.00
AUDIOQUEST	AQ M-1	15-30	IM	No	25		3.0	1.5		E	0.3 x 0.7	15/15	U	S	5.5	95.00	40.00
	AQ MC-4	10-40	MC	No	25		2.5	2.0		E	0.3 x 0.7	8/8	F	S	4.5	195.00	125.00
	AQ 404BH	10-50	MC	Yes	25		2.2	2.0		X	0.3 x 1.6	8/8	F	S	8.9	295.00	195.00
	AQ 404BM	10-50	MC	Yes	25		1.1	2.0		X	0.3 x 1.6	8/8	F	S	8.9	295.00	195.00
	AQ 404BL	10-50	MC	Yes	25		0.2	2.0		X	0.3 x 1.6	8/8	F	S	8.9	295.00	195.00
	AQ B-100H	10-50	MC	Yes	25		2.2	2.0		M		10/10	F	S	9.2	595.00	395.00
	AQ B-100M	10-50	MC	Yes	25		1.1	2.0		M		10/10	F	S	9.2	595.00	395.00
	AQ B-100L	10-50	MC	Yes	25		0.2	2.0		M		10/10	F	S	9.2	595.00	395.00



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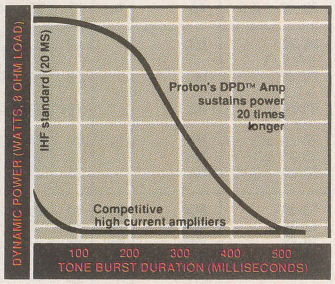
If you're running that terrific new CD player off an amplifier or receiver that's three to five years old, you're missing out on a great deal of clean, uncompromising sound. Most amps of that vintage just can't create the extra headroom that's necessary for accurate digital reproduction. Every time the music hits a peak, your amp will be gasping for breath. And you'll definitely hear about it. Unless you have a Proton 40 Series amplifier or receiver with our exclusive, patented DPD circuitry.

Reserve power in an instant

DPD stands for Dynamic Power on Demand™. Designed for the increased demands of today's digital audio discs and hi-fi video sound, it utilizes a sophisticated, dual power supply which acts as a power reserve. During musical peaks, it delivers up to four times the amplifier's rated power for an amazing six dB of headroom. And DPD handles these boosts much more smoothly.



Plus, DPD sustains that dynamic power up to 400 milliseconds. More than enough time for you to hear all the crisp, clean transient response you've been missing. From the pluck of a cello. To the crash of a cymbal. As faithfully as if they were being performed live.

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Stereohedron, Fine Line,
Line Contact, Long Line,
Line Trace, or similar

MANUFACTURER	Model	Frequency Response, Hz to kHz, ±dB	Principle: Moving Iron=MI, Induced Magnet=IM, Moving Coil=MC, Moving Magnet=MM	Individual Response Curve Supplied?	Channel Separation, 1 kHz, dB	Channel Separation, 10 kHz, dB	Output, mV, 1 kHz, 5 cm/Sec. rms Lateral Velocity	Recommended Tracking Force Range, Grams	Recommended Load Capacitance, pF	Stylus Type—See Code	Stylus Radius (Radii), Mils	Dynamic Compliance, μm/mN, Vertical/Lateral	Stylus Replacement: User = U, Factory = F	Mounting: Integral Shell = I, P-Mount = P, Standard = S	Weight, Grams	Price, $	Replacement Stylus Price, $
AUDIO-TECHNICA	AT120E	15-25 ±1.0	MM	No	29	20	5.0	1.0-1.8	100-200	E	0.3 x 0.7		U	S	6.4	95.00	45.00
	AT125LC	10-28 ±1.0	MM	No	29	20	5.0	1.0-1.8	100-200	X			U	S	6.4	150.00	60.00
	AT130E	10-30 ±1.0	MM	No	30	20	5.0	0.8-1.8	100-200	E	0.2 x 0.7		U	S	6.4	135.00	50.00
	AT140ML	5-32 ±1.0	MM	No	30	20	5.0	0.8-1.6	100-200	M			U	S	6.5	195.00	75.00
	AT155LC	5-35 ±1.0	MM	Yes	31	21	5.0	0.8-1.6	100-200	X			U	S	6.4	250.00	100.00
	AT160ML	5-35 ±0.75	MM	Yes	31	21	5.0	0.8-1.8	100-200	M			U	S	8.1	295.00	125.00
	AT132EP	10-30 ±1.0	MM	No	30	20	5.0	0.8-1.8	100-200	E	0.2 x 0.7		U	P		150.00	50.00
	AT152MLP	5-35 ±1.0	MM	Yes	31	21	5.0	0.8-1.6	100-200	M			U	P		250.00	100.00
	AT201P	20-22 ±1.0	MM	No	26	16	5.0	1.0-1.5	100-200	X	0.6		U	P/S		55.00	25.00
	AT201EP	20-25 ±1.0	MM	No	26	17	5.0	1.0-1.5	100-200	E	0.4 x 0.7		U	P/S		65.00	30.00
	AT211EP	15-25 ±1.0	MM	No	29	18	5.0	1.0-1.5	100-200	E	0.4 x 0.7		U	P/S		75.00	35.00
	AT216EP	15-27 ±1.0	MM	No	29	20	5.0	1.0-1.5	100-200	E	0.3 x 0.7		U	P/S		100.00	45.00
	AT221EP	10-28 ±1.0	MM	No	31	20	5.0	1.0-1.5	100-200	E	0.2 x 0.7		U	P/S		135.00	65.00
	AT231LP	10-30 ±1.0	MM	No	31	21	5.0	1.0-1.5	100-200	X			U	P/S		145.00	60.00
	AT30E	15-25 ±1.0	MC	No	25	15	0.3	1.4-2.0		E	0.3 x 0.7		U	S	5	150.00	65.00
	AT30HE	15-25 ±1.0	MC	No	29	20	2.0	1.4-1.8		E	0.3 x 0.7		U	S	5	150.00	65.00
	AT31E	15-28 ±1.0	MC	No	29	20	0.4	1.2-1.8		E	0.2 x 0.7		U	S	4.8	195.00	80.00
	AT35E	15-30 ±1.0	MC	No	30	20	0.4	1.2-1.8		E	0.2 x 0.7		U	S	4.3	295.00	100.00
	AT312EP	15-25 ±1.0	MC	No	30	20	0.4	1.0-1.5		E	0.2 x 0.7		U	S	6	175.00	65.00
A.V.A.	Longhorn	20-30 ±1	IM	No	35	30	4	1.5-2.0	200	E	0.2 x 0.7		U	S	8	99.99	40.00
AZDEN	GM-P5L	10-60	MC	Yes	30	28	0.2	1.0-1.5	150	X	0.3 x 0.15	17/10	F	P/S	5.9	250.00	125.00
	GM-1E	10-22	MC	Yes	28	20	2.0	1.5-2.5	150	E	0.3 x 0.7	10/10	U	S	2.7	125.00	65.00
	YM-P50VL	10-24	MM	No	30	25	4.0	1.0-1.5	150	X	0.3 x 0.15	17/10	U	P/S	5.9	150.00	75.00
	YM-P50E	10-22	MM	No	28	22	4.0	1.0-1.5	150	E	0.3 x 0.7	17/10	U	P/S	5.9	90.00	45.00
	YM-P20E	10-22	MM	No	24	20	4.0	1.0-1.5	150	E	0.3 x 0.7	17/10	U	P/S	5.9	70.00	35.00
	YM-P50C	10-22	MM	No	24	20	4.0	1.25-2.0	150	C	0.65	17/10	U	P/S	5.9	60.00	30.00
	YM-10VE	10-24	MM	No	26	20	4.5	1.0-1.5	150	X	0.3 x 0.7	17/10	U	S	4.5	90.00	45.00
	YM-10E	10-22	MM	No	24	18	4.5	1.25-2.0	150	E	0.3 x 0.7	10/10	U	S	4.5	70.00	35.00
	YM-10C	10-22	MM	No	22	16	4.5	1.5-2.5	150	C	0.65	10/10	U	S	4.5	60.00	30.00
BANG & OLUFSEN	MMC 1	20-20 ±1	MI	Yes	30	22	2.12	1	200-400	X	0.1 x 0.1	30/30		P	1.6	445.00	
	MMC 2	20-20 ±1.5	MI	Yes	25	20	2.12	1	200-400	X	0.12 x 0.12	30/30		P	1.6	290.00	
	MMC 3	20-20 ±2	MI	Yes	25	20	2.12	1.2	200-400	E	0.15 x 0.15	25/25		P	1.6	180.00	
	MMC 4	20-20 ±2.5	MI	Yes	22	17	2.12	1.2	200-400	E	0.2	25/25		P	1.6	105.00	
	MMC 5	20-20 ±3	MI	Yes	20	15	2.12	1.5	200-400	E	0.25	20/20		P	1.6	60.00	
BENZ-MICRO	MC1	10-60 +1,-0.8	MC	Yes	40	30	0.4	1.4-1.7	100	M			F	S	7.3	695.00	300.00
CELLO	Maestro		MC	No				2.1-2.6					F	S		2000.00	
	Chorale		MC	No				2.2-2.5					F	S		800.00	
CLEARAUDIO	Veritas Integrated (w/Tonearm)	10-50 ±0.5	MC	Yes	30		0.5	2.0-2.4		X		15/15	F	I	17	800.00	450.00
	Veritas Standard	10-50 ±0.5	MC	Yes	30		0.5	2.0-2.4		X		15/15	F	S	4.4	800.00	450.00
	Gamma	10-50 ±0.5	MC	Yes	25		0.5	2.0-2.4		X		15/15		S	4.4	450.00	
MITCHELL A. COTTER	ADB-2	10-35 ±0.5	MC	Yes	35	30	1.0	2.5-8		X	0.08 x 12.0	4.8/4.8	F	S	24	1200.00	800.00
DECCA	Super Gold	10-40	MI	No	25		4	1.7	220	V		5/12	F		6.7	499.00	300.00
DENON	DL-1000	20-110	MC	Yes	30		0.12	0.7-0.9		X	0.06		F	S	6	859.00	
	DL-305	20-75	MC	Yes	28		0.20	1.0-1.4		X	0.05 x 0.1		F	S	5.8	559.00	
	DL-304	20-75	MC	Yes	28		0.18	1.0-1.4		X	0.05 x 0.1		F	S	7	395.00	
	DL-302	20-70	MC		28		0.18	1.1-1.5		X	0.05 x 0.1		F	S	7	260.00	
	DL-301	20-60	MC		28		0.3	1.2-1.6		X	0.07 x 0.14		F	S	4.7	159.00	
	DL-160	20-50	MC		28		1.6	1.3-1.9		X	0.07 x 0.14		F	S	4.8	115.00	
	DL-110	20-45	MC		25		1.6	1.5-2.1		X	0.1 x 0.2		F	S	4.8	85.00	
	DL-80	20-45	MC		25		1.6	1.5-2.1		X	0.1 x 0.2		U	S	4.5	60.00	36.00
DIGITRAC	450 SE	20-30 ±3	MI		24		4	1.0-1.5	200-500	X		35/35	U	P/S	6	149.00	75.00
	380 NE	20-25 ±3	MI		22		4	1.25-1.75	200-500	E		30/30	U	P/S	6	89.00	45.00
	280 E	20-20 ±3	MI		20		4	1.25-1.75	200-500	E		25/25	U	P/S	6	69.00	35.00
	190 S	20-18 ±3	MI		20		4	1.25-1.75	200-500	S		20/20	U	P/S	6	49.95	25.00
DYNAVECTOR	DV-17D2MR	20-100	MC	Yes	20	20	0.2	1.8-2.0		X	0.16 x 0.2	15/20	F	S	5.3	480.00	300.00
	DV-23RSMR	20-80	MC	Yes	20	20	0.2	1.5		X	0.16 x 0.2	15/20	F	S	5.3	350.00	210.00
	DV-19A	20-70	MC	Yes	20	20	0.25	1.7-2.0		X	0.3 x 0.7	20/20	F	S	5.3	230.00	125.00
	DV-50A	20-50	MC	Yes	20	20	0.2	1.3-1.7		E	0.3 x 0.7	20/20	F	S	4.5	198.00	110.00
	DV-20B2	20-40	MC	Yes	20	20	3.6	1.8		E	0.3 x 0.7	24/25	F	S	5.3	298.00	164.00
	DV-20A2	20-40	MC	Yes	20	20	3.6	1.8		E	0.3 x 0.7	24/25	F	S	5.3	240.00	132.00
	DV-10X4	20-25	MC	Yes	20	20	2.5	1.7		E	0.3 x 0.7	24/25	F	S	4.5	180.00	112.00
	DV-10P	20-25	MC	Yes	20	20	2.5			E	0.3 x 0.7		F	P		150.00	100.00
EMT-FRANZ	XSD-15	20-30 ±2	MC	Yes	25		1.5	2.5		X		15/15	F	I		535.00	195.00
ENTRÉ	MC-1	20-30 ±1.5	MC	Yes	22		0.5	2.0		E	0.3 x 0.8	7/	F	S	5.9	195.00	155.00
	MC-5	20-30 ±1.5	MC	Yes	26		0.25	1.8		E	0.3 x 0.8	7/	F	S	5.9	295.00	235.00
	MC-9	20-30 ±1.5	MC	Yes	26		0.25	1.8		E	0.3 x 0.8	7/	F	S	5.9	395.00	315.00
EPOCH	HZ9S	10-30	MM	Cal.	35	22	0.8	0.75-1.5	100	X	0.2 x 0.3	25/	U	S	4	250.00	90.00
	LZ9S	10-50	MM	Cal.	35	22	0.04	0.75-1.5	100	X	0.2 x 0.3	25/	U	S	3.8	250.00	90.00
	LZ8S	10-40	MM	No	35	22	0.04	0.75-1.5		X	0.2 x 0.3	20/	U	S	3.8	190.00	75.00
	HZ8S	10-30	MM	No	35	22	0.8	0.75-1.5		X	0.2 x 0.3	20/	U	S	4	190.00	75.00
	HZ7S	10-25	MM	No	32	20	0.8	0.75-1.5		X	0.3 x 2.8	17/	U	S	4	120.00	50.00
	HZ6E	10-22	MM	No	32	15	0.8	0.75-1.5		E	0.2 x 0.7	15/	U	S	4	95.00	40.00

PHONO CARTRIDGES

MANUFACTURER	Model	Frequency Response, Hz to kHz, ±dB	Principle: Moving Iron=MI, Induced Magnet=IM, Moving Coil=MC, Moving Magnet=MM	Individual Response Curve Supplied?	Channel Separation, 1 kHz, dB	Channel Separation, 10 kHz, dB	Output, mV, 1 kHz, 5 cm/Sec. rms Lateral Velocity	Recommended Tracking Force Range, Grams	Recommended Load Capacitance, pF	Stylus Type—See Code	Stylus Radius (Radii), Mils	Dynamic Compliance, μm/mN, Vertical/Lateral	Stylus Replacement: User = U, Factory = F	Mounting: Integral Shell = I, P-Mount = P, Standard = S	Weight, Grams	Price, $	Replacement Stylus Price, $
FIDELITY RESEARCH	MC-44	20-20 +3,-1	MC	No	26	20	0.2	1.15-1.4		X		20/20	F	S	6.2	259.00	195.00
	MC-45	20-20 +3,-1	MC	No	26	20	0.2	1.15-1.4		X		20/20	F	S	6.2	359.00	265.00
GARROTT	P-77	20-20 ±2.0	MM	No	25		4	1.6-1.8		M		18/18	U	S	5.8	275.00	165.00
GOLDBUG LABS	Medusa	20-20 ±1	MC	Yes	27		0.2	1.8-2.0		X	0.3 x 0.7	12/9	F	S	5.8	250.00	125.00
	Clement	20-20 ±1	MC	Yes	27		0.2	1.5-1.7		X	0.3 x 0.7	36/13	F	S	5.6	490.00	245.00
	Mr. Brier	20-20 ±1	MC	Yes	27		0.22	1.5-1.7		X	0.3 x 0.7	17/15	F	S	7.0	990.00	495.00
	Ms. Brier	20-20 ±1	MC	Yes	27		0.22	1.5-1.7		X	0.3 x 0.7	17/15	F	S	7.2	1400.00	700.00
GOLDRING	Epic	20-18 ±3	MM	No	20		5.5	1.25-1.75		E	0.3 x 0.7	16/	U	S	6.5	50.00	30.00
	G1010	20-20 ±2	MM	No	25		6.5	1.5-2.5	200	E	0.3 x 0.7	24/	U	S	6.3	79.00	50.00
	G1020	20-20 ±2	MM	No	25		6.5	1.5-2.5	200	V	VDH II	24/	U	S	6.3	99.00	60.00
	G1040	20-22 ±2	MM	No	25		6.5	1.5-2.5	200	V	VDH I	24/	U	S	6.3	169.00	99.00
	Electro II	20-22 ±3	MC	Yes	25		2.5	1.6-2.2		V	VDH I	18/	F	S	9	299.00	199.00
	Electro II LZ	20-22 ±3	MC	Yes	25		0.25	1.6-2.2		V	VDH I	18/	F	S	9	399.00	266.00
	Gerard Louis	20-22 ±3	MC	Yes	25		0.25	1.6-2.2		V	VDH I	18/	F	S	9	899.00	599.00
GRACE	F-9E Ruby	10-50 ±2	MM	No	30	25	2.6	1.25-2.0	400	E		20/20	U	S	6	300.00	200.00
	F-9E Gold	10-50 ±2	MM	No	30	25	3.75	1.25-2.0	200	E		20/20	U	S	6	275.00	112.50
	F-9E Super	10-47 ±2	MM	No	30	25	3.75	1.25-2.0	200	E		20/20	U	S	6	225.00	112.50
	F-9L	10-40	MM	No	30	25	5.5	1.25-2.0	350	E		20/20	U	S	6	200.00	100.00
	F-8L	20-20	MM	No	25	20	5.5	1.25-2.0	100	E		20/20	U	S	6	150.00	75.00
GRADO	XTE+	10-35	MI	No		20	5.6	2-3		E	0.2 x 0.5		U	S	5	25.00	17.00
	XCE+	10-35	MI	No		20	5.6	2-3		E	0.2 x 0.5		U	S	5	37.50	24.00
	XTE+1	10-50	MI	No		20	5.6	1-2		E	0.2 x 0.5		U	P/S	5	18.00	14.00
	XCE+1	10-50	MI	No		20	5.6	1-2		E	0.2 x 0.5		U	P/S	5	48.00	26.00
	XF3E+	10-55	MI	No		25	5.6	0.75-2		E	0.2 x 0.5		U	P/S	5	60.00	28.00
	XF2+	10-55	MI	No		25	5.6	0.75-2		E	0.2 x 0.5		U	P/S	5	75.00	30.00
	XF1+	10-55	MI	No		25	5.6	0.75-2		E	0.2 x 0.5		U	P/S	5	90.00	38.00
	X+	10-60	MI	No		25	5.6	0.75-2			0.2 x 0.5		U	P/S	5	110.00	43.00
	X1+	10-60	MI	No		25	5.6	0.75-2		E	0.2 x 0.5		U	P/S	5	165.00	63.00
	X2+	10-60	MI	No		25	5.6	0.75-2		E	0.2 x 0.5		U	P/S	5	265.00	100.00
JOSEPH GRADO SIGNATURE	8MX	10-50	MI	No	30	20	5.5	1.5	200		0.2		U	S	5.5	200.00	100.00
	10MX	10-50	MI	No	30	20	2.8	1.5	200		0.2		U	S	5.5	300.00	150.00
	MCX	10-50	MI	No	30	20	2.1	1.5	200		0.2		U	S	5.5	300.00	150.00
HIGHPHONIC	MC-A2e	20-20 ±1.5	MC	Yes	30	25	0.12	0.9-1.1		X	0.1 x 1.2	17/	F	S	6½	250.00	200.00
	MC-3	10-70 ±1.5	MC	Yes	30	25	0.12	0.9-1.1		X	0.1 x 1.2	17/	F	S	6½	325.00	260.00
	MC-4	10-50 ±1.5	MC	Yes	30	25	0.25	1.5-1.9		X	0.25 x 1.2	8/	F	S	7½	395.00	315.00
	MC-R5	10-70 ±1.5	MC	Yes	30	25	0.12	0.9-1.1		X	0.1 x 1.2	18/	F	S	6½	550.00	440.00
	MC-A6	10-75 ±1.5	MC	Yes	30	25	0.12	0.9-1.1		X	0.1 x 1.2	18/	F	S	6½	695.00	555.00
	Signature MC-D10	10-80 ±1.5	MC	Yes	30	25	0.13	1.1-1.3		X	0.1 x 1.2	15/	F	S	6½	1100.00	880.00
	MC-D12	10-80 ±1.5	MC	Yes	30	25	0.25	1.5-1.9		X	0.1 x 1.2	8/	F	S	7½	1250.00	1000.00
	MC-D15	10-85 ±1.5	MC	Yes	35	30	0.12	0.9-1.1		X	0.1 x 1.2	18/	F	S	6½	1500.00	1200.00
	MC-D15 Signature	10-85 ±1.5	MC	Yes	35	30	0.12	0.9-1.1		X	0.1 x 1.2	18/	F	S	6½	1995.00	1595.00
KISEKI	Lapis Lazuli		MC	Yes			0.4	2.0		X			F	S	11	3500.00	2100.00
	Agaat Ruby	20-50	MC	Yes	30	25	0.4	2.0		X	0.14 x 0.6	20/20	F	S	11	1250.00	690.00
	Purpleheart Sapphire	20-50	MC	Yes	30	25	0.4	2.0		X	0.14 x 0.6	20/20	F	S	7.5	900.00	495.00
	Purpleheart Blue Silverspot	20-50	MC	Yes	30	25	0.3	2.0		X	0.14 x 0.6	17/17	F	S	7.5	800.00	440.00
		20-50	MC	Yes	30	25	0.3	2.0		E	0.3 x 0.7	17/17	F	S	11	600.00	330.00
KOETSU	Black Gold Line	10-50 ±2	MC	No	25		0.5	1.5-1.8		X			F	S		750.00	425.00
	Rosewood	10-50 ±2	MC	No	25		0.5	1.7-2.0		X			F	S		975.00	550.00
	Onyx Sapphire	10-50 ±2	MC	No	25		0.5	1.7-2.0		X			F	S		1695.00	850.00
	Rosewood Signature	10-50 ±2	MC	No	25		0.3	1.7-2.0		X			F	S		1695.00	850.00
	Onyx Signature	10-50 ±2	MC	No	25		0.3	1.7-2.0		X			F	S		2450.00	1250.00
LINN	Karma	20-20 ±1	MC	No	30			1.7		E	0.2 x 0.8		F	S	6	795.00	530.00
	Asak	20-20 ±1	MC	No	25			1.7		E	0.2 x 0.8		F	S	6	485.00	323.33
	K9	20-20 ±2	MM	No	25			1.7		E	0.2 x 0.8		U	S	6	175.00	105.00
	Basik	20-20 ±2	MM	No	25			1.8		S				S	6	50.00	
MADRIGAL	Carnegie One	20-20 ±1.5	MC					1.5-1.9		M				S	6.7	590.00	
JOHN MAROVSKIS	JMAS MIT-1	20-20 ±3	MC	No	25	20	0.25	2.25-2.50	500	V		/16	F	S	5.5	550.00	275.00
MAYWARE	MC-2V	10-50 ±2	MC	Yes	29		0.25	1.9		X		8/	F	S	6.9	250.00	175.00
	MC-3L/2	10-50 ±2	MC	Yes	29		2.5	1.9		X		8/	F	S	6.9	250.00	175.00
	MC-7V	10-50 ±1.5	MC	Yes	30		0.25	1.8		X		10/	F	S	7	500.00	350.00
MISSION	773mm	10-28 ±2	MM	No	28		3.0	1.5-2.5	100-1000	E	0.3 x 0.8	22.5/	U	S	6.4	69.00	
	Solitaire	20-20 ±2	MM	No	28		3.0	1.8	100-1000	E	0.3 x 0.8	30.0/	U	S	5.7	99.00	
	773LC	20-20 ±2	MC	Yes	20	15	0.2	2.0	100-1000	E	0.6 x 0.8	15.0/	F	S	6.2	199.00	
	773HC	20-20 ±1	MC	Yes	20	15	1.7	2.0	100-1000	E	0.3 x 0.7	15.0/	F	S	6.2	399.00	
	The Rose		MC	Yes									F	S		599.00	
MIYABI	MCA	10-50 ±2	MC	No	25		0.3	1.5-2.0		X		10/10	F	S	8.5	450.00	250.00
	Ivory	10-50 ±2	MC	No	25		0.3	1.5-2.0		X		10/10	F	S	13.5	1695.00	600.00

STYLUS TYPE
C—Conical
S—Spherical
E—Elliptical
M—MicroLine, MicroRidge, or similar
V—Van den Hul
X—Hyper-Elliptical, Stereohedron, Fine Line, Line Contact, Long Line, Line Trace, or similar

PHONO CARTRIDGES

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MANUFACTURER	Model	Frequency Response, Hz to kHz, ±dB	Principle: Moving Iron = MI, Induced Magnet = IM, Moving Coil = MC, Moving Magnet = MM	Individual Response Curve Supplied?	Channel Separation, 1 kHz, dB	Channel Separation, 10 kHz, dB	Output, mV, 1 kHz, 5 cm/Sec. rms Lateral Velocity	Recommended Tracking Force Range, Grams	Recommended Load Capacitance, pF	Stylus Type—See Code	Stylus Radius (Radii), Mils	Dynamic Compliance, μm/mN, Vertical/Lateral	Stylus Replacement: User = U, Factory = F	Mounting: Integral Shell = I, P-Mount = P, Standard = S	Weight, Grams	Price, $	Replacement Stylus Price, $
MONSTER CABLE	Alpha 1	20-20 ±1	MC	Yes	25		0.3	1.75		X		15/15	F	S	6.5	325.00	190.00
	Alpha 2	20-20 ±1	MC	Yes	30		0.3	1.75		M		15/15	F	S	6.5	650.00	390.00
	Alpha 2 H.O.	20-20 ±1	MC	Yes			1.5	1.8		M		15/25	F	S	6.8	650.00	390.00
MUSIC & SOUND	Econocoil	20-20 ±2	MC	No	25	20	2.0	1.5-1.8		E	0.3 x 0.7	8.5/10	F	S	4.5	129.00	65.00
NAGAOKA	MP50 Super	20-28 ±1	IM	Yes	27	14	2.5	1.1-1.5	100	X	0.2 x 0.7		U	S	9	250.00	150.00
	MP30	20-25 ±1	IM	No	25	11	3.0	1.3-1.8	100	E	0.4 x 0.7		U	S	9	180.00	120.00
	MP20	20-23 ±1	IM	No	25	11	4.0	1.5-2.0	100	E	0.4 x 0.7		U	S	7.8	150.00	90.00
	MP15	20-20 ±1	IM	No	24	12	4.5	1.5-2.0	100	E	0.3 x 0.7		U	S	7.8	120.00	80.00
	MP11 Boron	20-20 ±1	IM	No	21	11	5.0	1.8-2.3	100	E	0.3 x 0.7		U	S	6.8	100.00	60.00
	MP11	20-20 ±1	IM	No	23	11	5.0	1.8-2.3	100	E	0.3 x 0.7		U	S	6.8	75.00	50.00
	MP10	20-20 ±2	IM	No	22	9	5.0	2.0-2.5	100	C	0.5 x 0.5		U	S	6.8	50.00	30.00
ODYSSEY ENGINEERING	MC-1	20-20 ±1	MC	Yes	25		0.4	2-3		X	0.3 x 0.7	6/	F	S		995.00	525.00
ORTOFON	OM-40	20-29 +3,-1	Var. Mag. Shunt	Yes	25		3.5	1.0-1.5	200-500	V		45/45	U	S	2.5	300.00	150.00
	OM-30	20-27 +3,-1	VMS	No	25		3.5	1.0-1.5	200-500	X		40/40	U	S	2.5	225.00	120.00
	OMP-30	20-27 +3,-1	VMS	No	25		3.5	1.25	200-500	X		40/40	U	P	6	225.00	120.00
	OM-20	20-22 +3,-1	VMS	No	25		4.0	1.0-1.5	200-500	E		35/35	U	S	2.5	175.00	75.00
	OMP-20	20-22 +3,-1	VMS	No	25		4.0	1.25	200-500	E		35/35	U	P	6	175.00	75.00
	OM-10	20-22 +3,-1.5	VMS	No	22		4.0	1.25-1.75	200-500	E		30/30	U	S	2.5	95.00	40.00
	OMP-10	20-22 +3,-1.5	VMS	No	22		4.0	1.25	200-500	E		30/	U	P	6	95.00	40.00
	OM-5	20-22 +3,-1.5	VMS	No	22		4.0	1.25-2.0	200-500	E		25/25	U	S	2.5	65.00	30.00
	OMP-5	20-20	VMS	No	22		4.0	1.25	200-500	E		25/25	U	P	6	65.00	30.00
	FF15XEII	20-20	VMS	No	20		6.0	1.5-3.0	400	E		20/20	U	S	5	50.00	20.00
	VMS30 MkII	20-20	VMS	No	27		5.0	1.0-1.6	400	X		22/22	U	S	5	185.00	90.00
	VMS20E MkII	20-20	VMS	No	25		5.0	1.0-1.2	400	E		25/25	U	S	5	155.00	70.00
	VMS10E MkII	20-20	VMS	No	25		5.0	1.7-2.3	400	E		20/20	U	S	5	130.00	50.00
	VMS5E MkII	20-20	VMS	No	20		6.0	1.7-2.3	400	E		20/20	U	S	5	80.00	30.00
	VMS3E MkII	20-20	VMS	No	20		6.0	1.7-2.3	400	E		15/15	U	S	5	60.00	20.00
	TM-20U	20-20 +3,-1	VMS	No	25		3.5	1.0-1.5	400	X		35/35	U	P/S	6	115.00	75.00
	TM-14	20-20	VMS	No	20		4.5	1.0-1.5	400	E		30/30	U	P/S	6	75.00	30.00
	TM-7	20-20	VMS	No	20		5	1.0-1.5	400	E		30/30	U	P/S	6	60.00	25.00
	MC2000	5-50 +4,-1	MC	Yes	25		0.05	1.2-1.8		X		20/20	F	S	11	750.00	400.00
	MC200U	20-35 +3,-1	MC	No	25		0.09	1.2-1.8		X		13/13	F	S	5.3	250.00	180.00
	MC100U	20-25 +3,-1	MC	No	25		0.09	1.2-1.8		E		11/11	F	S	5.3	150.00	100.00
	MC 20 Super	10-55 +3,-1	MC	No	25		0.25	1.5-1.9		V		17/17	F	S	9	300.00	175.00
	MCP 100 Super	20-20 +3,-1	MC	No	25		0.26	1.25		E		20/20	F	P	6	250.00	125.00
	MC 10 Super	10-30 +5,-1	MC	No	25		0.3	1.3-1.8		E		14/14	F	S	7	150.00	75.00
	X3-MC	20-40 +3,-1	MC	No	25		2.0	1.8-2.2		X		13/13	F	S	4.1	140.00	85.00
	X1-MC	20-30 +3,-1	MC	No	22		2.0	1.8-2.2		E		13/13	F	S	4.1	75.00	48.00
	X3-MCP	20-40 +3,-1	MC	No	25		2.0	1.25-1.5		X		13/13	F	P	6.3	140.00	85.00
	X1-MCP	20-30 +3,-1	MC	No	22		2.0	1.25-1.5		E		13/13	F	P	6.3	75.00	48.00
	SPU Gold	20-20 ±1.5	MC	No	25		0.2	3.0-5.0		E		8/8	F	I	32	800.00	
PARASOUND	PCe77	20-26 ±0.6	IM		30	20	4.0	1.25		E	0.4 x 0.7		U	P	5.9	79.95	
	IM1700	20-20 ±1	IM		28	20	5.0	1.5-2		S	0.6		U	P	5	49.95	
	PCs55	20-20 ±1	IM		28	20	5.0	1.5-2		C	0.6		U	S	3.7	49.95	
PICKERING	XLZ/7500S	10-50	MM	No	35		0.33	0.75-1.5	1000	X	0.3 x 2.8	30/	U	S	5	250.00	90.00
	XSV/5000	10-50	MM	No	35		3.8	0.75-1.5	275	X	0.3 x 2.8		U	S	5.6	250.00	80.00
	XSV/4000	10-36	MM	No	35		3.8	0.75-1.5	275	X	0.3 x 2.8	30/	U	S	5.6	200.00	56.00
	XSV/3000	10-30	MM	No	35		3.8	0.75-1.5	275	X	0.3 x 2.8	30/	U	S	5.6	180.00	49.95
	TLZ/7500S	10-50	MM	No	35		0.33	0.75-1.5	1000	X	0.3 x 2.8		U	P	5.9	250.00	90.00
	XSP/4004	10-36	MM	No	35		3.8	0.75-1.5	275	X	0.3 x 2.8	30/30	U	P	5.9	200.00	56.00
	XSP/3003	10-30	MM	No	35		5.0	0.75-1.5	275	X	0.3 x 2.8	30/30	U	P	5.9	180.00	49.95
	TL-4 Super	10-25	IM	No	35		4.4	0.75-1.5	275	X	0.3 x 2.8	15/15	U	P	5.9	150.00	45.00
	TL-3S	10-25	IM	No	35		4.4	0.75-1.5	275	X	0.3 x 2.8		U	S	5.9	125.00	40.00
	TL-2S	10-22	IM	No	35		4.4	0.75-1.5	275	X	0.3 x 2.8		U	S	5.9	100.00	36.00
	TL-2E	10-22	IM	No	35		4.4	0.75-1.5	275	E	0.3 x 0.7		U	S	5.9	85.00	29.50
	TL-1	10-20	IM	No	32		4.4	0.75-1.5	275	E	0.3 x 0.7		U	S	6	75.00	24.50
	TLE Type 2	10-20	MM	No	28		3.0	1-1.5	275	E	0.3 x 0.7		U	S	6	55.00	22.50
	TLE	10-20	MM	No	28		4.4	1-1.5	275	E	0.3 x 0.7		U	S	6	50.00	20.00
	XV-15/1200E	10-30	IM	No	35		4.4	0.75-1.5	275	E	0.2 x 0.7	20/	U	S	6.3	150.00	35.00
	XV-15/757S	10-25	IM	No	35		4.4	0.75-1.5	275	X	0.3 x 2.8	20/	U	S	6.3	125.00	43.75
	XV-15/625E	10-25	IM	No	35		4.4	0.75-1.5	275	E	0.3 x 0.7	15/	U	S	6.3	100.00	30.00
	XV-15/400E	10-25	IM	No	35		4.4	1-2	275	E	0.4 x 0.7	12/	U	S	6.3	85.00	28.50
	V-15 Series IIS	10-25	MM	No	25		3.5	0.75-1.5	275	X	0.3 x 2.7		U	S	5.5	80.00	37.50
	V-15 Series IIEE	10-20	MM	No	25		3.5	0.75-1.5	275	E	0.3 x 0.7		U	S	5.5	50.00	21.50
	V-15 Series IIE	10-18	IM	No	22		3.5	1-2	275	E	0.3 x 0.7		U	S	5.5	45.00	16.50
	XV-15/625DJ	20-20	IM	No	30		4.4	1-4	275	E	0.4 x 0.7		U	S	5.5	75.00	30.00
	TL 625DJ	20-20	IM	No	30		4.4	3.5-4	275	E	0.4 x 0.7		U	S	8.5	75.00	30.00
PREMIER	LMX Boron	10-45	MC	Yes	30	25	0.35	1.8-2.2		V		18/18	F	S	4.75	250.00	125.00
	LME Improved	10-40	MC	Yes	30	25	0.35	1.3-2.0		E	0.3 x 0.8	18/18	F	S	4.75	170.00	85.00
	LMS Improved	10-35	MC	Yes	27	22	0.35	1.3-2.0		S	0.6	18/18	F	S	4.75	125.00	62.50
PROMETHEAN AUDIO PRODUCTS	Green	20-20 ±1	MI					1.7		E			F	S	7	220.00	140.00
	Positive-Pivot	20-20 ±1	MI					1.7		E			F	S	7	600.00	
RATA	RP20	20-20 ±3	MM	No	25		4.5	1.5-1.75	150	E		16/	U	I	7.1	50.00	35.00
	RP40	20-20 ±3	MM	No	26		4.5	1.5-1.75	150	E		16/	U	I	7.1	100.00	70.00
	RP70	20-20 ±3	MM	No	28		4.5	1.5-1.75	150	X		16/	U	I	7.1	200.00	150.00
REGA RESEARCH	RB100		MM	No				1.5-1.9		E			F	S	6	99.00	60.00

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MANUFACTURER	Model	Frequency Response, Hz to kHz, ±dB	Principle: Moving Iron=MI, Induced Magnet=IM, Moving Coil=MC, Moving Magnet=MM	Individual Response Curve Supplied?	Channel Separation, 1 kHz, dB	Channel Separation, 10 kHz, dB	Output, mV, 1 kHz, 5 cm/Sec. rms Lateral Velocity	Recommended Tracking Force Range, Grams	Recommended Load Capacitance, pF	Stylus Type—See Code	Stylus Radius (Radii), Mils	Dynamic Compliance, µm/mN, Vertical/Lateral	Stylus Replacement: User = U, Factory = F	Mounting: Integral Shell=I, P-Mount=P, Standard=S	Weight, Grams	Price, $	Replacement Stylus Price, $
SAEC	C-1	10-50	MC	No	30		0.4	1.25-1.75		X		10/	F	S	9	495.00	396.00
	C-2	10-30	MC	No	25		2.5	1.55-2.05		X		8/	F	S	9.5	395.00	315.00
	C-102	20-30	MC	No	25		0.6	1.45-1.95		X		10/	F	S	7	250.00	200.00
SHINON	Titan	15-45	MC	No			0.4	1.25-1.75		E			F	S		220.00	110.00
	MV 2.5	15-45	MC	No			2.5	1.75-2.25		X			F	S		330.00	165.00
	Saphic	15-45	MC	No			0.3	1.75-2.25		X			F	S		449.00	225.00
	Red Boron	15-45	MC	No			1.0	1.5-1.8		M			F	S		659.00	330.00
	Red Boron Signature	15-45	MC	No			1.0	1.5-1.8		M			F	S		995.00	499.00
SHURE	Ultra 500	10-35 ±0.5	MM	No	27	20	3.2	1-1.25	250	M	0.15 x 3.0		U	S	9.3	400.00	145.00
	Ultra 400	10-30 ±0.5	MM	No	27	17	4.0	1-1.25	250	M	0.15 x 3.0		U	S	4.5	250.00	110.00
	Ultra 300	10-22 ±0.5	MM	No	25	17	4.0	1-1.25	250	M	0.15 x 3.0		U	S	4.5	160.00	84.00
	V15 Type V-MR	20-28 ±1.5	MM	Yes	25	18	3.2	0.75-1.5	250	M	0.15 x 3.0		U	S	6.6	275.00	125.00
	V15 Type V-B	20-28 ±1.5	MM	Yes	25	18	3.2	0.75-1.5	250	X	0.2 x 1.5		U	S	6.6	220.00	110.00
	V15 Type V-P	20-28 ±1.5	MM	Yes	25	18	3.2	1.25	250	X	0.2 x 1.5		U	P	5.9	205.00	100.00
	ML140HE	20-22	MM	No	25	15	4.0	1.0-1.25	250	X	0.2 x 1.5		U	S	4.5	189.95	99.95
	ML120HE	20-20	MM	No	25	15	3.5	1.0-1.25	250	X	0.2 x 1.5		U	S	4.5	154.95	76.95
	M111HE	20-20	MM	No	25		4.0	1.25	250	X	0.2 x 1.5		U	P/S	8.3	134.95	58.95
	M110HE	20-20	MM	No	25		4.0	1.25	250	X	0.2 x 1.5		U	P/S	7.3	109.95	49.95
	M105E	20-20	MM	No	25		4.7	1.25	250	E	0.2 x 0.7		U	P/S	7.8	99.95	40.95
	M104E	20-20	MM	No	20		5.0	1.25	250	E	0.2 x 0.7		U	P/S	7.3	69.95	31.95
	M99E	20-20	MM	No	20		5.0	1.25	250	E	0.2 x 0.7		U	P/S	7.3	49.95	22.95
	M92E	20-18	MM	No	20		5.0	1.25	250	E	0.2 x 0.7		U	P/S	7.3	29.95	17.95
	M44E	20-20	MM	No	20		9.5	1.75-4.0	450	E	0.4 x 0.7		U	S	6.7	56.95	25.95
	M44G	20-20	MM	No	20		6.2	0.75-1.5	450	S	0.6		U	S	6.7	51.95	23.95
	M44-7	20-20	MM	No	20		9.5	1.5-3	450	S	0.7		U	S	6.7	49.95	22.95
	M44C	20-20	MM	No	20		9.5	3.0-5.0	450	S	0.7		U	S	6.7	49.95	22.95
	M55E	20-20	MM	No	20		6.2	0.75-2	450	E	0.2 x 0.7		U	S	6.7	64.95	27.95
	SC39EJ	20-20	MM	No	20		4.0	1.5-3	250	E	0.4 x 0.7		U	S	6.3	70.00	32.00
	SC39B	20-20	MM	No	20		4.0	1.5-3	250	S	0.7		U	S	6.3	62.50	25.50
	SC35C	20-20	MM	No	20	10	5.0	4-5	450	S	0.6		U	S	6.2	45.00	17.00
SIGNET	MR 5.0 basic	15-25	MM	No	27	17	5.0	1.3-2.3	100-200	E	0.4 x 0.7		U	S	6	125.00	62.50
	MR 5.0e	10-30	MM	No	29	19	5.0	0.9-1.9	100-200	E	0.3 x 0.7		U	S	6	195.00	95.00
	MR 5.0me	5-30	MM	No	30	20	5.0	0.8-1.6	100-200	E	0.2 x 0.7		U	S	6	225.00	112.50
	MR 5.0ic	5-35	MM	No	33	23	5.0	0.8-1.6	100-200	X			U	S	6	275.00	137.50
	MR 5.0ml	5-37	MM	No	33	25	5.0	0.8-1.8	100-200	M			U	S	6	350.00	175.00
	MK 55e	20-28	MC	No	28	18	0.5	1.2-1.8		E	0.3 x 0.7		U	S	4.2	150.00	75.00
	MK 66e	15-30	MC	No	29	20	0.5	1.2-1.8		E	0.2 x 0.7		U	S	4.2	200.00	100.00
	MK 120HE	15-30	MC	No	29	20	2.0	1.2-1.8		E	0.2 x 0.7		U	S	5	200.00	100.00
	MK 220e	5-50	MC	No	30	20	0.4	1.0-2.0		E	0.2 x 0.7		F	S	4.8	400.00	
	MK 440ml	5-50	MC	No	33	25	0.1	1.0-1.6		M			F	S	7	600.00	
	101	20-20	MM	No	24	15	5.0	1.0-1.5	100-200	C	0.6		U	P/S	6	60.00	30.00
	103	15-25	MM	No	25	17	5.0	1.0-1.5	100-200	E	0.4 x 0.7		U	P/S	6	90.00	45.00
	105	15-27	MM	No	29	18	5.0	1.0-1.5	100-200	E	0.3 x 0.7		U	P/S	6	110.00	55.00
	107	10-30	MM	No	31	21	5.0	1.0-1.5	100-200	X			U	P/S	6	150.00	75.00
	TK2Ep	15-25	MM	No	26	17	5.0	1.0-1.5	100-200	E	0.4 x 0.7		U	P/S	6	65.00	32.50
	TK4Ep	15-28	MM	No	28	19	5.0	1.0-1.5	100-200	E	0.3 x 0.7		U	P/S	6	95.00	45.00
	TK6Ep	10-30	MM	No	29	20	5.0	1.0-1.5	100-200	E	0.2 x 0.7		U	P/S	6	150.00	75.00
	TK8LCp	5-35	MM	No	33	23	5.0	1.0-1.5	100-200	X			U	P/S	6	250.00	125.00
	TK10ml Series II	5-35	MM	No	35	26	2.2	1.0-1.5	100-200	M			U	S	7.5	450.00	225.00
SONUS	D-5	10-20 ±1	MI	Yes	30	25	4	1-1.25	340	X			F	S	5.5	250.00	125.00
	SB-11	20-20	MI	No	30	25	4	1-1.5	340	X			F	S	5.5	195.00	98.00
	CG-12	10-30	MI	No	30	25	4	1-1.5	340	X			U	S	5.5	165.00	87.00
	CS-22	10-38	MI	No	30	25	5	1-1.5	340	X			U	S	5.5	100.00	45.00
	CS-23	20-22	MI	No	30	25	5	1-1.5	340	E			U	S	5.5	95.00	45.00
	CB-23	20-22	MI	No	30	25	5	1.5-2.0	340	E			U	S	5.5	80.00	40.00
	SR-202	10-20	MI	No	30	25	5	1.5-2.5	340	E			U	S	5.5	60.00	25.00
	SPM-5	20-20	MI	No	30	25	5	1.25	340	X			U	P	5.5	160.00	
	SPM-4	20-20	MI	No	30	25	4	1.25	340	X			U	P	5.5	135.00	
	SPM-3	20-20	MI	No	30	25	4	1.25	340	E			U	P	5.5	135.00	
	SPM-2	20-20	MI	No	30	25	4	1.25	340	E			U	P	5.5	90.00	
	SPM-1	20-20	MI	No	30	25	4	1.25	340	E			U	P	5.5	90.00	
STANTON	981LZ MKIIS	10-50	MM	Cal.	35	25	0.06	0.75-1.5	100	X	0.3 x 2.8	30/	U	S	5.5	250.00	90.00
	981HZ MKIIS	10-50	MM	Cal.	35	25	0.7	0.75-1.5		X	0.3 x 2.8	30/	U	S	5.5	250.00	90.00
	881S MKIIS	10-25	MM	Cal.	35		0.9	0.75-1.25	275	X	0.3 x 2.8	30/	U	S	5.5	180.00	75.00
	681 EEE MKIIS	10-22	IM	Cal.	35		0.7	0.75-1.5	275	X	0.3 x 2.8	25/	U	S	6.3	120.00	45.00
	L847S	10-36	MM	No	35		2.5	0.75-1.5	275	X	0.3 x 2.8		U	P	5.9	180.00	60.00
	L837S	10-30	MM	No	35		3.0	0.75-1.5	275	X	0.3 x 2.8		U	P	5.9	140.00	55.00
	L747S	10-25	MM	No	35		4.4	0.75-1.5	275	X	0.3 x 2.8		U	P	5.7	125.00	40.00
	L737S	10-22	MM	No	35		4.4	0.75-1.5	275	X	0.3 x 2.8		U	P	5.7	100.00	36.00
	L737E	10-22	MM	No	35		4.4	0.75-1.5	275	E	0.3 x 2.8		U	P	5.7	85.00	29.50
	L727E	10-20	MM	No	32		4.4	0.75-1.5	275	E	0.3 x 2.8		U	P	5.7	75.00	24.50
	L725E	10-22	MM	No	28		3.0	0.75-1.5	275	E	0.4 x 0.7		U	P	5.7	55.00	22.00
	L720EE	10-20	MM	No	28		3.2	0.75-1.5	275	E	0.4 x 0.7		U	P	5.7	50.00	20.00
	885LZS	20-40	MM	No	35		0.6	0.75-1.5	100	X	0.3 x 2.8	25/	U	S	5.5	150.00	60.00
	785LZE	20-30	MM	No	30		0.6	0.75-1.5	100	E	0.2 x 0.7	20/	U	S	5.5	100.00	45.00
	L680EL	20-18	MM	No	30		1.1	3.5-4	275	E	0.4 x 0.7		U	P	8.4	106.00	30.00
	680EL	20-18	MM	No	30		1.1	2-5	275	E	0.4 x 0.7	13.5/	U	S	5.5	106.00	30.00
	681SE	10-10	MM	Cal.	35		1.0	2-4	275	E	0.4 x 0.7	12.5/	U	S	6.3	110.00	39.00
	680AL	20-18	MM	No	30		1.1	2-5	275	S	0.7	13/13	U	S	5.5	90.00	25.00
	500AL	20-17	MM	No	28		1.0	2-5	275	S	0.7	10/	U	S	5	53.00	12.00
	L500AL	20-17	MM	No	28		1.0	3.5-4	275	S	0.7		U	S	8.4	53.00	12.00
	500AL-DP	20-17	MM	No	28		1.0	3.5-4	275	S	0.7		U	S	8.4	65.00	12.00
	680EE(S)	10-20	MM	No	35		0.82	0.75-1.5	275	X	0.3 x 2.8	18/18	U	S	6.3	95.00	43.75
	680EE	20-20	MM	No	35		0.82	0.75-1.5	275	E	0.3 x 0.7	18/18	U	S	6.3	76.00	31.25
	600EE(S)	20-20	MM	No	35		0.82	1-2	275	X	0.3 x 0.7		U	S	5	66.00	27.50
	600E	20-20	MM	No	35		1.0	1.5-3	275	E	0.4 x 0.7	11/	U	S		56.50	25.00
	500EE MKII	10-22	MM	No	35		1.0	0.75-1.5	275	E	0.3 x 0.7	16/	U	S	5.5	50.00	25.00
	500E MKII	10-22	MM	No	35		1.0	0.75-1.5	275	E	0.4 x 0.7	14/	U	S	5.5	45.00	20.00
	500A MKII	10-20	MM	No	35		1.0	1-2	275	S	0.7	14/	U	S	5.5	37.50	12.00

Taken on face value alone, this is the most remarkable car stereo in the world.

Introducing the phenomenal Kenwood KRC-999 cassette tuner. If the face plate isn't enough to make your jaw drop, wait 'til you hear the way the 999 sounds. And performs.

It's the most advanced car stereo ever made.

Period.

"Sure," you say, "I've heard that before." But how many car stereos have you heard that are driven by a 16K ROM computer?

A computer that lets you customize the sound to suit your car's environment.

And pre-set electronic volume levels.

And automatically seek out a track anywhere on a side.

And scan the first five seconds of every cut.

And take stations with the strongest signal and automatically program them into memory.

Heard enough?

How about the lowest signal to noise ratio available. Metal tape frequency response of 20 ~ 22.5k (± 3dB). A 7-band graphic equalizer that instantly converts to a spectrum analyzer. Or an automatic azimuth-adjusting hyperbolic-contour tape head. And three drive motors.

Yes. The beauty of the KRC-999 is more than skin deep. It represents the culmination of 25 years of superior audio technology from Kenwood. Consider it our anniversary present to the world of music.

25th Anniversary

For the Kenwood dealer nearest you, call 1-800-CAR SOUND.

KENWOOD

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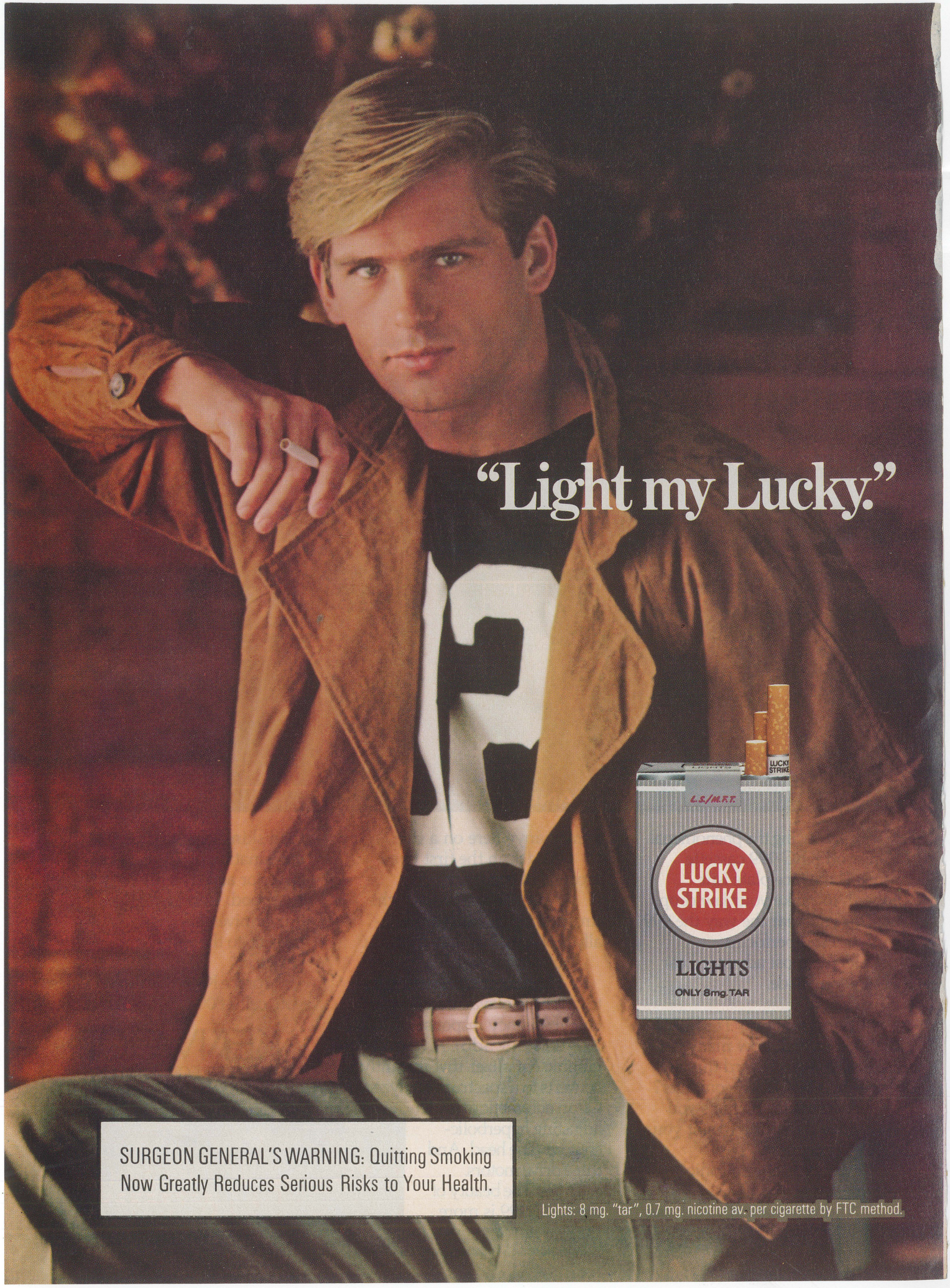

"Light my Lucky."
LUCKY STRIKE
LIGHTS
ONLY 8mg. TAR
SURGEON GENERAL'S WARNING: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health.
Lights: 8 mg. "tar", 0.7 mg. nicotine av. per cigarette by FTC method.

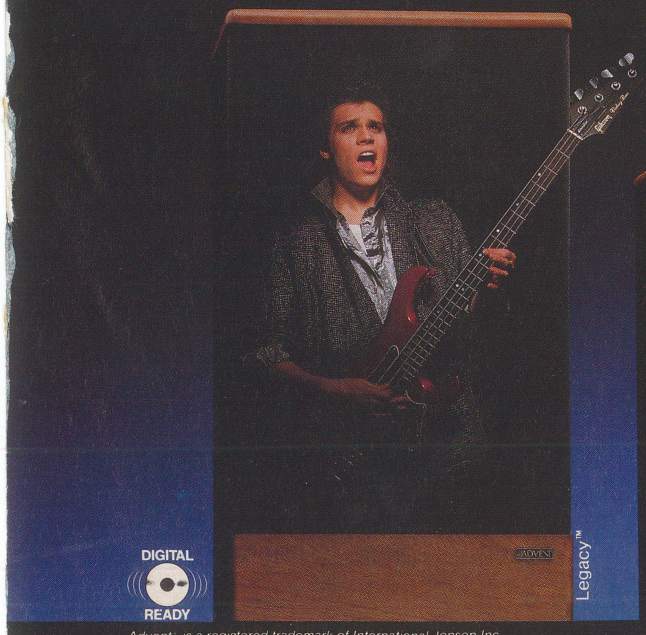
PHONO CARTRIDGES

STYLUS TYPE
C—Conical
S—Spherical
E—Elliptical
M—MicroLine, MicroRidge, or similar
V—Van den Hul
X—Hyper-Elliptical,
Stereohedron, Fine Line,
Line Contact, Long Line,
Line Trace, or similar

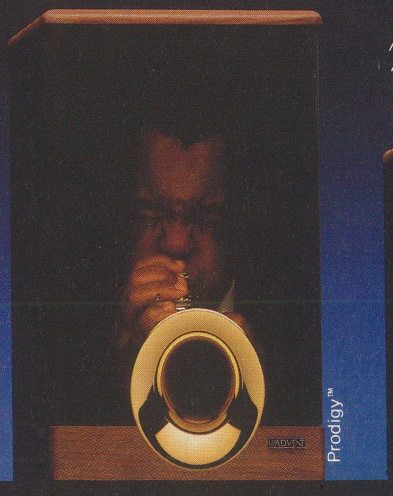
MANUFACTURER	Model	Frequency Response, Hz to kHz, ±dB	Principle: Moving Iron = MI, Induced Magnet = IM, Moving Coil = MC, Moving Magnet = MM	Individual Response Curve Supplied?	Channel Separation, 1 kHz, dB	Channel Separation, 10 kHz, dB	Output, mV, 1 kHz, 5 cm/Sec. rms Lateral Velocity	Recommended Tracking Force Range, Grams	Recommended Load Capacitance, pF	Stylus Type—See Code	Stylus Radius (Radii), Mils	Dynamic Compliance, μm/mN, Vertical/Lateral	Stylus Replacement: User = U, Factory = F	Mounting: Integral Shell = I, P-Mount = P, Standard = S	Weight, Grams	Price, $	Replacement Stylus Price, $
SUPEX	SDX-3300 Boron High Output	10-30 ±2	MC	Yes	30	25	1.75	1.6-2.0		E	0.3 x 0.7		F	S	5.3	675.00	337.50
	SDX-3300 Boron	10-30 ±2	MC	Yes	30	25	0.2	1.6-2.0		E	0.3 x 0.7		F	S	5.3	675.00	337.50
	SD-330	20-30 ±2	MC	Yes	30	25	0.15	1.5-1.9		E	0.3 x 0.7		F	S	3.0	225.00	125.00
	SD-900 MK IV TQA	20-45 ±2	MC	Yes	30	25	0.2	1.8-2.2		E	0.3 x 0.8		F	S	8.3	275.00	150.00
	SD-901 MK IV TQA	20-45	MC	Yes	30	25	2.0	1.8-2.2		E	0.3 x 0.8		F	S	8.3	275.00	150.00
TALISMAN	Virtuoso DTi	15-35 ±2	MC	Yes	35	35	1.8	1.75-2.25		V			F	S	7.5	1200.00	700.00
	Virtuoso B	15-35 ±2	MC	Yes	35	35	1.8	1.75-2.25		V			F	S	7.5	800.00	465.00
	Alchemist IIIS	10-60	MC	Yes	30	25	2.0	1.5-2.5		X		15/12	F	S	6.7	450.00	260.00
	Alchemist IA	20-40	MC	Yes	25	20	2.0	1.5-2.1		E	0.3 x 0.7	15/12	F	S	6.7	250.00	145.00
	Talisman S	10-60	MC	Yes	30	25	0.26	1.7-2.3		X	0.2 x 1.2	15/12	F	S	6.3	325.00	190.00
	Talisman B	10-50	MC	Yes	30	25	0.26	1.5-2.1		X	0.2 x 1.2	15/12	F	S	6.3	265.00	155.00
	Talisman A	20-40	MC	Yes	25	20	0.26	1.5-2.1		E	0.3 x 0.7	15/12	F	S	6.3	200.00	115.00
TECHNICS	EPC-P530	20-30 ±3	MM	No	25		2.5	1.0-1.5		E	0.3 x 0.7		U	P	6	50.00	
	EPC-P540	20-35 ±3	MM	No	25		2.5	1.0-1.5		E	0.3 x 0.7		U	P	6	70.00	
	EPC-P550	20-35 ±3	MM	No	25		2.5	1.0-1.5		E	0.3 x 0.7		U	P	6	100.00	
	EPC-P310MC2	20-15 ±0.5	MC	Yes	25	20	0.22	1.0-1.5		E	0.2 x 0.7		F	P	6	200.00	
	EPC-P205CMK4	20-15 ±0.5	MM	Yes	25	20	2.5	1.0-1.5		E	0.2 x 0.7		U	P	6	250.00	
	EPC-205CMK4	20-15 ±0.5	MM	Yes	25	20	2.5	1.0-1.5		E	0.2 x 0.7		U	S	15.5	280.00	
	EPC-305MC2	5-100	MC											I		300.00	
VAN DEN HUL	MC-10		MC	Yes	40	40	0.35	1.3-1.5		V		20/35	F	S	7.3	695.00	200.00
	One		MC	Yes	40	40	0.35	1.3-1.5		V		20/35	F	S	7.3	975.00	200.00
	EMT MC-1B	20-20 ±0.75	MC	Yes	25	25	0.3	2-2.5		V		8/10	F	S	7.5	1375.00	200.00
VIDEOTON-CORAL	Coral MC81	10-45	MC	No	32	27	0.3	1.6-1.9	100	X	0.3 x 0.7		U	S	5	80.00	35.00
	Coral MC82	10-60	MC	Yes	35	29	0.3	1.5-1.8	100	V			F	S		235.00	170.00
WIN RESEARCH	FET-10 w/Amp	0-50	FET	Yes	34	26	1V	0.75-1.25		X	0.5 x 0.75	40/	F	S			
YAMAHA	MC-100	20-20	MC		28		0.2	1.2-1.6		E	0.3 x 1.6	12/14	F	S	9.5	300.00	
	MC-505	20-20	MC		28		0.35	1.2-1.8		E	0.3 x 1.6	14/16	F	S	3.4	200.00	
	MC-501	20-20	MC		28		0.35	1.2-1.8		E	0.3 x 1.6	11/13	F	S	3.4	150.00	
	MC-10	20-20	MC		27		0.3	1.4-2.0		E	0.3 x 0.8	8/10	F	S	5.4	120.00	
	MC-21	20-20	MC		28		2.0	1.5-2.1		E	0.3 x 0.8	8/10	F	S	2.8	70.00	

LIVE. FROM ADVENT.®

Now all the great performance of Advent comes in 3 packages.



Music so clean and clear it sounds live. That's the promise of Advent's uniquely engineered speaker systems. High efficiency woofers with aluminum voice coils, ferrofluid-filled dome tweeters, incredible power handling and more—all the advanced technology today's digital recording demands. Legendary performance in handsome cabinetry with solid pecan. That's the Advent advantage.



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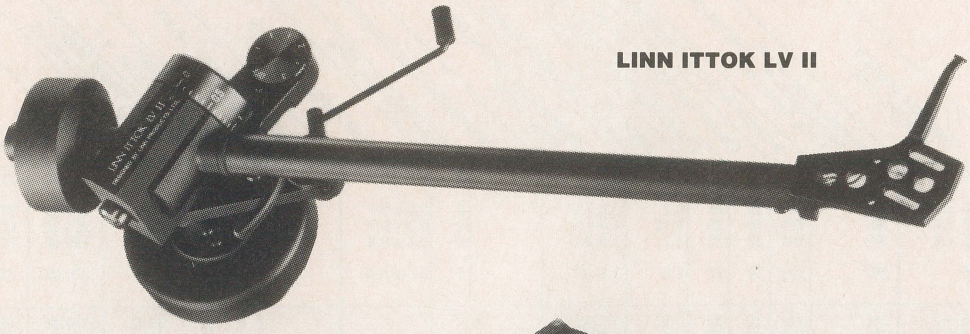
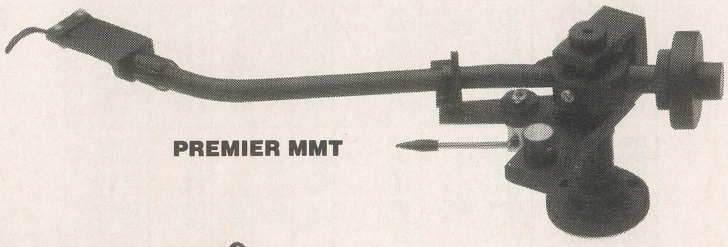
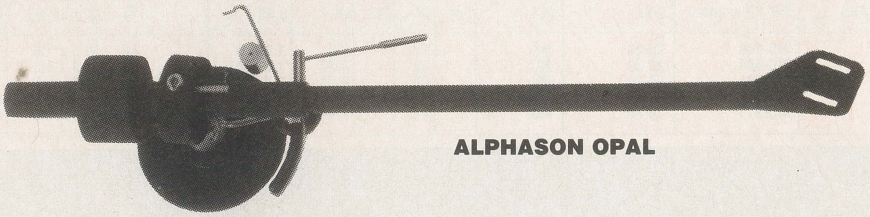


LINN ITTOK LV II



PREMIER MMT

ZETA STD.



ALPHASON OPAL

MANUFACTURER	Model	Type: Air-Bearing = A, Pivoted = P, Linear = L, Servo = S	Cartridge Mount: Fixed = F, Removable Shell = R, P-Mount = P, Changeable Wand = W	Cueing?	Anti-Skating Adjustment?	Adjustable Vertical Tracking Angle?	Pivot-Stylus Distance, Inches	Overall Length, Inches	Maximum Tracking Error, Degrees per Inch	Recommended Tracking Force Range, Grams	Cartridge Weight Range, Grams	Total Cable Capacitance, pF	Mounting Hole Diameter, Inches	Price, $	Notes
AIR TANGENT	Air Tangent	A/L	W	Yes		†									†VTA adjustable during play. Nonresonant magnesium arm tube; single-point mount.
ALPHASON	HR100S-MCS	P	F	Yes	Yes	Yes	9	11⅝		0-3.5	3-25		1¼	895.00	Titanium tube; carbide bearings; silver wire.
	HR100S	P	F	Yes	Yes	Yes	9	11⅝		0-3.5	3-25		1¼	795.00	As above but oxygen-free copper wiring.
	Xenon MCS	P	F	Yes	Yes	Yes	9	11⅝		0-3.5	3-25		1¼	625.00	Titanium tube; silver wire.
	Xenon	P	F	Yes	Yes	Yes	9	11⅝		0-3.5	3-25		1¼	525.00	As above but copper wiring.
	Delta	P	F	Yes	Yes	Yes	9	11½		0-3	3-15		1¼	399.00	
	Opal	P	F	Yes	Yes	Yes	9	11½		0-3	3-15		1	279.00	
CADAWAS ACOUSTICS	Columbia One			Yes	Yes	Yes				0-30	1-30			500.00	Modification; variable effective mass and vertical compliance.
MITCHELL A. COTTER	TAB-2	P	R	Yes	Yes	Yes	12	16½	0.24	2-10	3-35	250	1¾	1750.00	
DENNESEN	ABLT-1	A/L	W	Yes		Yes	Adj.	12	0	Adj.	Any	100		1450.00	
EMINENT TECHNOLOGY	Two	A/L	W	Yes	Yes	Yes	7⅜	8½	0		0-20	16		850.00	Includes air pump.
EMT-FRANZ	EMT 929	P	R	No	Yes		9¾			0-5				465.00	Dynamically and statically balanced in all planes.
	EMT 997	P	R	No	Yes		12			0-5				745.00	As above.

Model 2.5Fi (above)
automatic record cleaner
and cd-1 motorized cd cleaner

"Thanks to Nitty Gritty, every music lover can get the best sound from his records" (and compact discs, too)

So says James Jarvis of the SENSIBLE SOUND. And Bert Whyte of AUDIO, Tony Cordesman of STEREOPHILE, Julian Hirsch of STEREO REVIEW, Enid Lumley of INTERNATIONAL AUDIO REVIEW, Michel Prin of SON HI FI, Al Fasoldt of FANFARE, and Jack Philpot of AUDIO AMATEUR all agree: there is no other record or compact disc cleaning system that is equal to those made by Nitty Gritty Record Care Products of California.

Why do these independent audio critics feel so strongly? Because cleaning systems made by Nitty Gritty get records and compact discs 100% clean. Free of dust, grease and static electricity. Microscopically clean. *Perfectly* clean.

Have you ever listened to a *clean* record?

Records that have been cleaned by a Nitty Gritty sound more like *live* music. They have extended high frequency response, improved imaging, more acoustical space, and less noise.

There is no secret. The effectiveness of the Nitty Gritty record cleaning system is due to its superior design. The record cleaning system employs a powerful vacuum and a pure cleaning fluid. The Nitty Gritty cleaning fluid dissolves dust, and grease, neutralizes static charge, and then is suctioned immediately off, leaving a purified record. Perfectly prepared for play.

"*Any* record in one's collection, old or new, audiophile or not, will benefit *greatly* with a (Nitty Gritty) cleaning." Jarvis says, "I believe that anyone considering upgrading his system in any way should *first* obtain one of these record cleaning machines. Only then will he be aware of what he might be missing in the music, or of what his current system is really capable of in terms of music reproduction."

Digital gets a wash, too.

The Nitty Gritty compact disc cleaning system is also regarded as state-of-the-art. The CD-1 is the first *motorized* CD cleaner. It uses bi-directional rotation to safely and surely clean a compact disc. Bert Whyte said, "Nitty Gritty has come up with a CD cleaning machine that is unquestionably the *easiest* to use as well as the most efficient and *effective* method of ensuring pristine CD playing surfaces." The CD-1 also protects the CD with a clear coat that resists scratches. Perfectly protected from the elements.

And now, Nitty Gritty has accomplished yet another first: the first motorized cleaner for the 12 inch video laser disc. The DD3 (not shown) is designed to operate like the CD-1, but on a grander scale. It also has the ability to clean the other two sizes (10 inch and CD) of the digital discs. Perfectly clean.

Brochures, full reprints of test reports, and a list of dealers are available to you. Send your name and address for an immediate packet of ear-opening information.

Nitty Gritty Record Care Products
4650 Arrow Highway
Unit F4, Info Dept.
Montclair, California 91763
(714) 625-5525

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audioquest

Phono Cartridges	Price	AQ Trade-in Price
AQ M-1, Induced Magnetic Cartridge.	95.00	40.00 (replacement stylus)
AQ MC-4, High Output (2.5mV) Moving Coil.	195.00	125.00 when original returned
AQ 404B, Hollow Boron Cantilever, 2 piece brass support system.		
AQ 404BH (2.2mV), AQ 404BM (1.1mV), AQ 404BL (.22mV)	295.00	195.00 when original returned
AQ B-100, Hollow Boron Cantilever, machined aluminum body.		
AQ B-100H (2.2mV), AQ B-100M (1.1mV), AQ B-100L (.22mV)	595.00	395.00 when original returned

You may trade-up by using the credit earned by your old cartridge toward any current model.

Compact Disc Players	Price
AQ CD-1, smooth, clean and natural, includes 4 AQ Sorbothane Feet.	695.00
AQ TCD-10, vacuum tube player with exceptional resolution and musicality, remote control, 4 AQ Sorbo Feet.	1495.00

Speaker Cable	Price (+prep)
LiveWire BC-2, spiraled 2 conductor, PVC insulation.	.50/ft
LiveWire BC-4, spiraled 4 conductor, FMS geometry, PVC insulation.	.95/ft
LiveWire Type 6, spiraled 4, FMS magnetic balancing geometry, polypropylene insulation, outer jacket.	1.50/ft+$20/pr.
LiveWire Type 8, spiraled 8, FMS magnetic balancing geometry, polypropylene insulation, outer jacket.	3.00/ft+$30/pr.
LiveWire Type 10, better copper, better polypropylene, better sound (only available prepared).	7.50/ft+$30/pr.

Interconnecting Cable (available in any length)	Price
LiveWire Reference, foam polypropylene dielectric, OFHC, 100% foil shield.	45.00 / 3 ft. pr.
FMS Gold, as above but using 4 conductor FMS magnetic field balancing geometry.	65.00 / 3 ft. pr.
FMS Blue 2, spiraled 4, FMS geometry, teflon dielectric, litz OFHC, (only available prepared).	95.00 / 3 ft. pr.

4 foot Tonearm Set with teflon plug. Reference: 55.00 FMS Gold: 88.00 FMS Blue 2: 128.00

McLaren Audio Electronics	Price
McLaren 602 Straight line preamp, 60 or 80 dB gain.	1195.00
McLaren 402 Full feature preamp, 6 inputs, tone contols, phase control.	1495.00
McLaren 702 Stereo MOSFET power amp., 100/100 watts, stable into any load.	1195.00
McLaren 902 Mono MOSFET power amp., 250 watts, dedicated mono block design.	2390.00/pr

Accessories	Price
AQ Superclamp, Sorbothane plus reflex action clamps & damps grooved area of record, not just label.	65.00
AQ Sorbothane Record Mat, 1/8" thick, damps record and platter.	35.00
AQ Sorbothane Record Damper, damps record and spindle	12.00
AQ Sorbothane Isolation Foot, helps CD players, turntables, tube electronics, TVs, (set of 4).	39.00
AQ Sorbothane Vacuum Tube Dampers, set of 4, clear improvement from reduced hysteresis.	12.00
AQ Sorbothane Self-Stick Sheet, self adhesive backing lets you put Sorbothane anywhere it's needed.	15.00
AQ Record Brush, over 1000000 carbon fibers clean and control static.	15.00
AQ Electro Stylus Cleaner, vibrating stylus cleaner.	30.00
TRT's Wonder Solder, this solder really does sound better (15 ft).	15.00
AQ-10 Headshell, 10 gram anti-resonance headshell, LiveWire headshell leads.	35.00
AQ-16 Headshell, 16 grams, adjustable azimuth, LiveWire headshell leads.	39.00
Profile Pro-Lift, puts end-of-record-lift-off on any turntable.	39.00
LiveWire Headshell Leads, pure copper litz, no other insulation.	7.95

629 camino de los mares #306 san clemente, california 92672 714/240-0604

TONEARMS

MANUFACTURER	Model	Type: Air-Bearing=A, Pivoted=P, Linear=L, Servo=S	Cartridge Mount: Fixed=F, Removable Shell=R, P-Mount=P, Changeable Wand=W	Cueing?	Anti-Skating Adjustment?	Adjustable Vertical Tracking Angle?	Pivot-Stylus Distance, Inches	Overall Length, Inches	Maximum Tracking Error, Degrees per Inch	Recommended Tracking Force Range, Grams	Cartridge Weight Range, Grams	Total Cable Capacitance, pF	Mounting Hole Diameter, Inches	Price, $	Notes
GRACE	G 707III G 747	P P	F R	Yes Yes	Yes Yes	Yes Yes	9.3 9.3	11.7 11.7	0.4 0.4	0-3 0-3	4-10 4-10	86 86	1 1	300.00 300.00	Metal headshell; azimuth adjustable.
JOSEPH GRADO SIGNATURE	Laboratory Series	P	R	Yes	Yes	Yes	9.3			0.1-20	2-25			485.00	
HEYBROOK	The Heybrook	P	F	Yes	Yes	Yes	9	11¼		0.75-3	2-10	100	1¼	398.00	Damped magnesium tube.
LINN	Ittok LV II Basik Plus Basik LVX	P P P	F F R	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	9 9 9	11¼ 11¼ 11¼		0.75-3.0 0.75-3.0 0.75-3.0	3-9 2-10 2-10	100 100 100	1¼ 1¼ 1¼	650.00 210.00 200.00	
MAYWARE	Formula MKIV	P	F/R	Yes	Yes	No	9	11¾		0.75-3.0	3-11	115	¾	250.00	
MICRO SEIKI	MA-500 CF-1 MAX 505III MAX 237 MAX 282	P P P P P	F F R/W R/W R/W	Yes Yes Yes Yes Yes	Yes Yes Yes Yes Yes	Yes Yes Yes Yes Yes	9.3 9.3 9.3 9.3 15	12.4 12.4 12.7 12.7 11.1	1.5 1.5 1.5 1.5 1.5	0.75-2.5 0.75-2.5 0.75-2.5 0.75-2.5 0.75-2.5	4-12 4-12 4-12 4-12 4-12		1.4 1.4 1.4 1.7 1.7	195.00 395.00 395.00 895.00 995.00	
MISSION	The Mechanic	P	F	Yes	Yes	Yes	8.3	9.1				220	1¼	1200.00	
MRM AUDIO	Source Odyssey RPMKIII	P	W	Yes	Yes	Yes	9⅛	10¾		0.05-4	2-12	150	1¼	1495.00	
ODYSSEY ENGINEERING	RP1-XG mkII	P	W	Yes	Yes	Yes	9⅛	10¾		0.5-4	2-12	100	1¼	995.00	Choice of light, medium, or heavy tube; Van den Hul cable.
ORACLE	#1 #2						8.4							250.00 450.00	Remote-controllable; optical auto-lift.
PREMIER	FT-3 MMT	P P	F R	Yes Yes	Yes Yes	Yes Yes	9.4 9.4	12 12		0-3.0 0-3.0	4-14 4-14	 100	 ¾	475.00 250.00	Azimuth adjustable; includes VTA device and flexible interconnect box; tube stuffed with anti-resonant foam. Cone and ball-race bearings; azimuth adjustable; fluid damping optional.
REGA RESEARCH	RB300	P	F	Yes	Yes		9⅜	11⅝		0.5-3.0	3-18		1.0	240.00	Dynamic, spring-assist tracking force.
REVOLVER	Revolver	P	F	Yes	Yes	Yes	9	11.2		0-3	1-10	45	1.2	150.00	
SAEC	WE-308N WE-308L WE-317S WE-407/23 WE-407EX WE-308SX WE-506/30 WE-8000ST	P P P P P P P P	R R R R R R R R	Yes Yes Yes Yes Yes Yes Yes Yes	Yes Yes Yes Yes Yes Yes Yes Yes	Yes Yes Yes Yes Yes Yes Yes Yes	9¼ 10½ 8¾ 8¾ 8¾ 9¼ 11¼ 11½	13⅜ 14¾ 12¾ 12¾ 12¾ 13¾ 16½ 16¾	 1.5 	0-2 0-2 0-2.5 0-2.5 0-2.5 0-2 0-2 0-2	7.3-13.3 7.8-14.8 9.5-15.5 5.5-15.5 3.5-15.5 5.5-15.5 5.5-15.5 8-16.5	 	1.1 1.1 1.1 1.1 1.1 1.1 1.4 1.1	325.00 395.00 495.00 695.00 695.00 695.00 1000.00 1000.00	
SIGNET	XK 50 XK 35	P P	F/R/W F	Yes Yes	Yes Yes	Yes Yes	9½ 9½	13¼ 11⅝	1 1	0-1.6 0-2	4-11 2-9	75 75	1 1	450.00 300.00	Damped planar pivot. As above.
SME	Series V	P	F	Yes	Yes	†	9.2	11.6	0.3	0-3.0	4-18	140	Oval	1750.00	†VTA adjustable during play. One-piece cast-magnesium tube, ball-race bearings, van den Hul mono-crystal silver cable.
SONOGRAPHE	LMT	P	F	Yes	Yes	Yes	9⅛	11¾		0-3	4-14	100	¾	185.00	
SOUTHER ENGINEERING	Junior Triquartz Tribeam 12S Tribeam 16S	L L L L	W W W W	Yes Yes Yes Yes	 	Yes Yes Yes Yes	2.0 2.0 2.0 2.0	10 10 10 10	0 0 0 0	0.5-3.0 0.5-3.0 0.5-3.0 0.5-3.0	1-20 1-20 1-20 1-20	† † † †	(2)¼ (2)¼ (2)¼ (2)¼	550.00 850.00 3000.00 3500.00	†User-supplied. For 12-inch records; stainless steel. For 16-inch records; stainless steel.
SYRINX	LE-2 PU-4	P P	R F	Yes Yes	Yes Yes	Yes Yes	9¾	11½			3-12		1.2	400.00	Split effective mass; azimuth adjustable.
TECHNICS	EPA-250	P	W	Yes	Yes	Yes	10	12½	2.1	0-2	3-12.5	41.2	2½	500.00	
WELL TEMPERED LAB	Well Tempered Arm	P	F		Yes	Yes	9	11⅜					½	625.00	Variable viscous damping.
WHEATON MUSIC	Triplanar II	P	F	Yes	Yes	Yes	9¾	11⅞	0.03	1-3	4-22			2000.00	Azimuth adjustable; anti-skate defeat.
WIN RESEARCH	Pantograph	P	F	Yes	Yes	Yes	12		0	0-3	6	80	½	1095.00	
ZETA	Jr. STD. Van den Hul	P P P	F F F	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	9 9 9	11 11½ 11½		1-3 0.75-4 0.75-4	3-6 4-12 4-12	100 90 90	⅞ 1¼ 1¼	99.00 875.00 975.00	Oxygen-free copper wire; Canadian version with Tiffany connectors, $1050.00.

EVEN A DRAGON NEEDS A CLEAN HEAD!

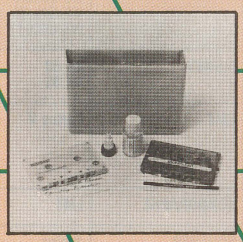
Even the worlds most sophisticated cassette recorder, The Nakamichi DRAGON, requires regular cleaning of the tape head to maintain its' state of the art performance. It was no wonder that S-711 INTRACLEAN® was chosen for use in Nakamichi's own service department. S-711 was scientifically designed to clean the vital components along the tape path. S-711's formulation of halogenated hydrocarbons exhibits extra special effectivness in removing heavy oxide deposits from tape heads and capstans. In addition, S-711's remarkable rejuvenation properties restores lost texture and prolongs the life of the pinch roller.

Even if you do not own a Nakamichi DRAGON, you can still improve the performance of your cassette recorder . . . with S-711 INTRACLEAN®. S-711 and the entire INTRACLEAN® Recorder Care Systems are available through fine audio stores everywhere. For the nearest AUTHORIZED INTRACLEAN® DEALER call 800-782-6911 or in California 800-624-0918.

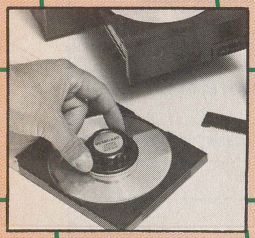
C-911 Cassette Cleaner

D-501 Cassette Demagnetizer

D-511 Wand Demagnetizer



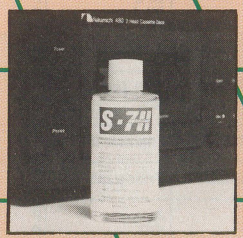
K-151 Autosound Care Kit



CD-101 Compact Disc Cleaner

V-311 VHS and V-321 Beta and VCR Cleaner

V-331 8mm Cleaner



S-711 Professional Tape Head Cleaner

INTRACLEAN®
RECORDER CARE SYSTEMS
a division of
AMERICAN RECORDER TECHNOLOGIES, INC. • P. O. Box 3592, • Simi Valley, CA. 93063

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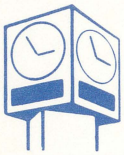
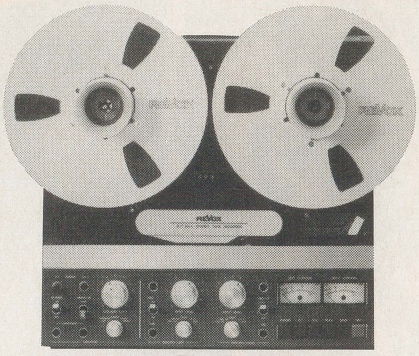


(PLEASE PRINT)

NATURE

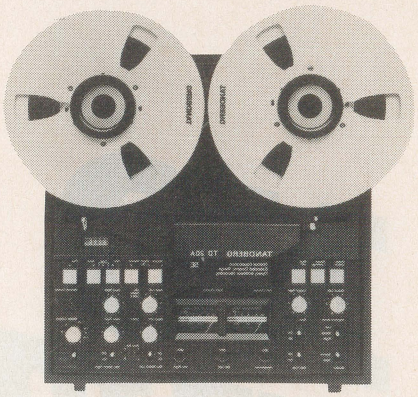
EARS IN PASSBOOK).

OPEN-REEL TAPE DECKS



REVOX B77 MKII

UHER 6000

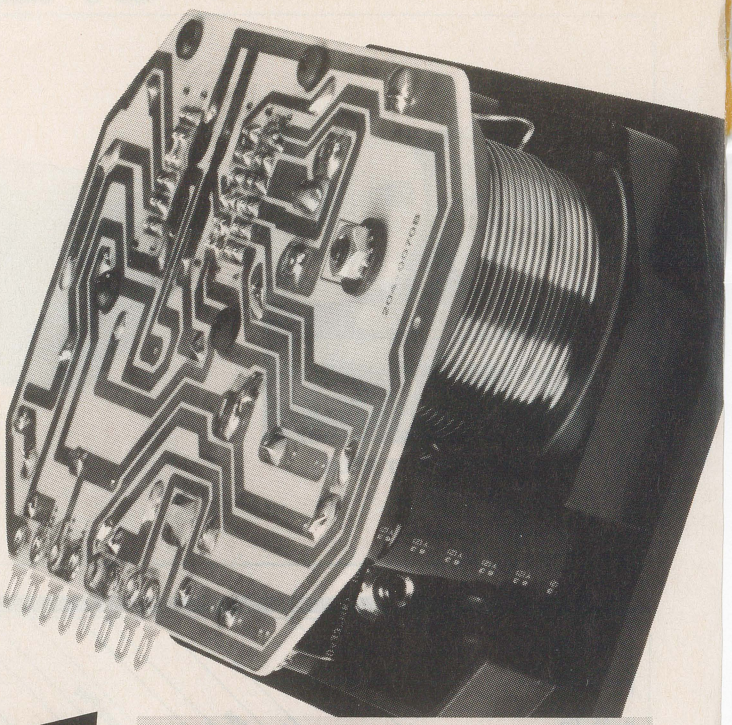


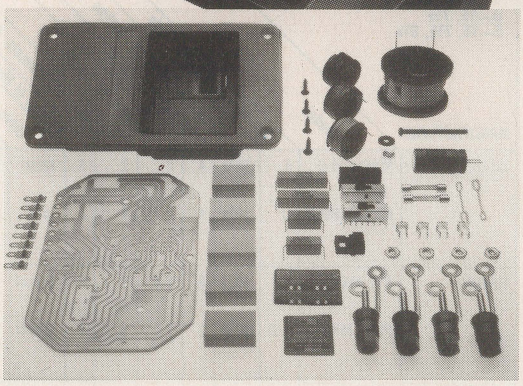
TANDBERG TD 20A-SE

SPEED CODE
A—7½, 3¾
B—7½, 3¾, 1⅞
C—7½, 3¾ 1⅞, 15/16
D—15, 7½
E—15, 7½, 3¾

MANUFACTURER	Model	Speeds—See Letter Code	Maximum Reel Size, Inches	Number of Heads	Number of Tracks	Number of Channels, Record/Play	Number of Motors	Drive to Capstan	Frequency Response, Hz to kHz, ±dB, with Best Tape at Highest Machine Speed	Wow & Flutter, Wtd. Peak, %	S/N, –dB	Output Level at 0 VU, mV	Mike Mixing?	Mike Input Impedance, Ohms; Balanced = B	Record Level Indicator(s), Number and Type	EE Tape Capable?	Dimensions, Inches	Weight, Lbs.	Price, $	Notes
OTARI	MX5050B-II	E	10½	4	2	2	3	Idler	20-20 ±2	0.04	72		Yes	150B	2 VU Mtrs. & 2 Peak LEDs	Yes	20.8 x 17.4 x 10.2	60	2495.00	
	MX5050BQ-II	D	10½	4	4	4	3	Idler	30-20 ±2	0.06	66		Yes	50k	4 VU Mtrs. & 4 Peak LEDs		20.8 x 17.4 x 10.2	60	3425.00	
REVOX	B77 MKII	†	10½	3	2/4	2	3	Direct	30-22 +2,-3	0.06	67	775	Yes	22k, 110k	2 Mtrs. & 2 Peak LEDs	No	16½ x 17¾ x 8¼	37½	1999.00	†Any two adjacent speeds from 15/16 to 15 ips.
	PR99 MKII	A/D	10½	3	2	2	3	Direct	30-22 +2,-3	0.06	67	775	Yes	†	2 Mtrs. & 2 Peak LEDs	No	17¾ x 19 x 8	40½	2595.00	†22k, 110k, balanced opt. Balanced line in/out; self-sync.
TANDBERG	TD 20A-SE	A/D	10½	3	2/4	2	4	Belt	20-30 ±2	0.03	80	450	Yes	800	2 Peak Mtrs.	No	17⅛ x 17¾ x 7¾	37½	1695.00	Normal and special EQ.
TEAC	X 300	A	7	3	4	2	3	Belt	30-34	0.04	65	450	Yes	10k	2 VU Mtrs.	Yes	18 x 12⅞ x 9	33	620.00	Record mute.
	X 300 R	A	7	3	4	2	3	Belt	30-34	0.04	65	450	Yes	10k	2 VU Mtrs.	Yes	18 x 12⅞ x 9	33	690.00	As above.
	X 7 MK II	A	7	3	4	2	3	Belt	30-34	0.03	†	436	Yes	10k	2 VU Mtrs.	Yes	16¼ x 18¼ x 10¾	39¾	790.00	†95 dB with dbx NR. Dual capstan, variable speed, manual cue.
	X 700 R	A	7	6	4	2	3	Belt	30-34	0.03	†	436	Yes	10k	2 VU Mtrs.	Yes	16¼ x 18¼ x 10¾	39¾	950.00	As above.
	X 2000	A	10½	3	4	2	3	Belt	25-33	0.03	††	436	Yes	10k	2 VU Mtrs.	Yes	19 x 16 x 10⅝	45¼	1400.00	††100 dB with dbx NR. Dual capstan, d.c. servo, spooling mode, variable speed, bias fine tuning, auto locator, Duplisync, remote control.
	X 2000 R	A	10½	6	4	2	3	Belt	25-33	0.03	††	436	Yes	10k	2 VU Mtrs.	Yes	19 x 16 x 10⅝	45¼	1600.00	As above but without spooling mode.
TECHNICS	RS-1500	E	10½	4	2/4	2/2	3	Direct	30-30 ±3	.018	68	775	Yes	4.7k	2 VU Mtrs.		19⅜ x 17½ x 10⅛	57¼	1600.00	2 track, 2 channel record/play; 4 track, 2 channel play.
	RS-1506	E	10½	4	2/4	2/2	3	Direct	30-30 ±3	.018	66	775	Yes	4.7k	2 VU Mtrs.		19⅜ x 17½ x 10⅛	57¼	1600.00	4 track, 2 channel record/play; 2 track, 2 channel play.
	RS-1520	E	10½	4	2/4	2/2	3	Direct	40-22 ±2	.035	68	2190	Yes	4.7k	2 VU Mtrs.		19¾ x 18 x 10⅛	61¾	2500.00	2 track, 2 channel record/play; 4 track, 2 channel play.
	RS-1700	E	10½	6	2/4	2/2	3	Direct	30-30 ±3	.018	66	775	Yes	4.7k	2 VU Mtrs.		19⅜ x 17½ x 10⅛	58½	2100.00	Bidirectional; 4 track, 2 channel record/play.
UHER	4000	C	5	3	2	1	1	Belt	20-25 ±2	0.2	64	775	Yes	200	1 VU Mtr.	Yes	11 x 3½ x 9	8	1449.00	
	4200	C	5	3	2	2	1	Belt	20-25 ±2	0.2	64	775	Yes	200B	2 VU Mtrs.	Yes	11 x 3½ x 9	8	1549.00	
	4400	C	5	3	4	2	1	Belt	20-25 ±2	0.2	62	775	Yes	200B	2 VU Mtrs.	Yes	11 x 3½ x 9	8	1549.00	24 hours record time.
	5000	C	5½	2	2	1	1	Idler	40-16 ±3	0.2	60	900	Yes	220	1 Peak Mtr.	Yes	13 x 6 x 13	18	1499.00	
	6000	†	5	3	2	1	3	Belt	20-22 ±3	0.2	62	775	Yes	220	1 VU Mtr.	Yes	11 x 3½ x 9	8	1699.00	†"C" speeds plus 15/32 ips. As above.
	1200	A	5	3	†	1	1	Belt	40-16 ±2	0.15	62	600	Yes	200	1 VU Mtr.	Yes	11 x 3½ x 9	8	4800.00	†Full.

NO GUTS, NO GLORY.





▲ A different breed of crossover. All components are computer-grade and mounted on 'military spec' epoxy circuit board. ADS' superior drivers allow the use of this better, more efficient crossover design.

The guts: Inside every ADS speaker you'll find drivers conceived, engineered, and built by ADS.

Conceived to be accurate, uncolored, and thoroughly reliable.

Engineered using proprietary computer analysis, to yield extraordinary performance.

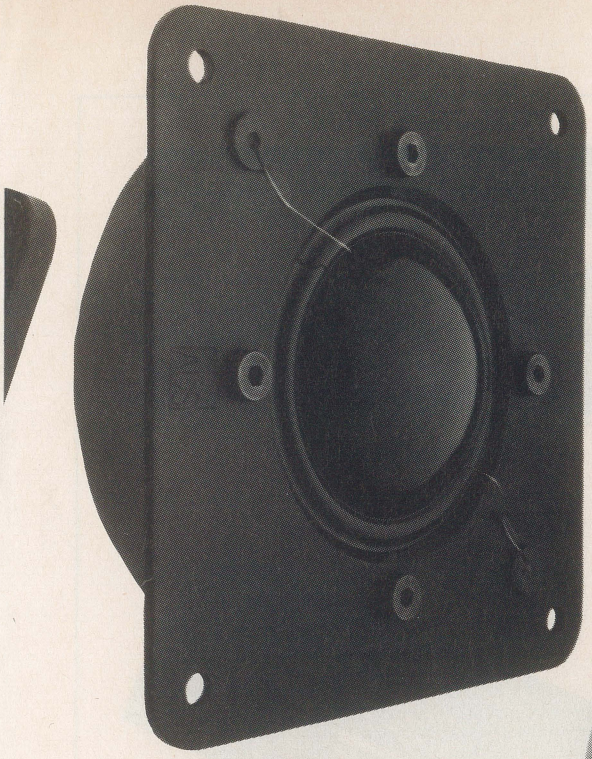
Built with precision and care unequalled in Europe, the Far East, anywhere in the audio industry.

Not every speaker maker builds its own drivers. None builds them as carefully as we do. That's why ADS speakers are picked as reference monitors by the premier CD label. That's why the new level of accuracy CD provides can be heard best on ADS speakers.

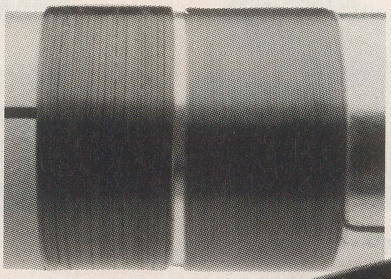
The glory?

Waiting for you at your ADS dealer. Because while we can tell you how beautifully we build them, only he can show you how much better they sound.

◀ L1290 tower and L880 bookshelf systems. Just part of a full range of home speakers, including our critically acclaimed mini speakers.

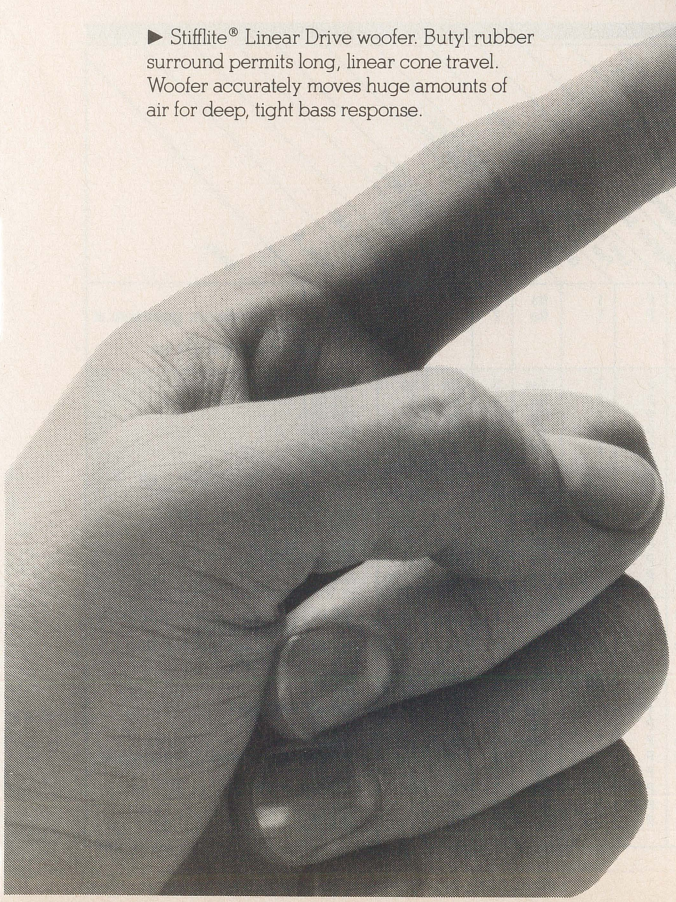


▲ Series 2 soft-dome midrange. Design fine-tuned by 16,000 data point computer analysis. Low mass diaphragm. Focused barium-ferrite magnet. High- temperature voice coil. Coloration nil. Delivers outstanding dynamic range. Ditto for ADS soft-dome tweeters.



◀ Typical voice coil on left. ADS version on right. Smooth, tight windings and long voice coil mean accurate transients, low distortion. Coil always remains under amplifier control. Translates the full dynamics of digital source material.

▶ Stifflite® Linear Drive woofer. Butyl rubber surround permits long, linear cone travel. Woofer accurately moves huge amounts of air for deep, tight bass response.



ADS

For more fascinating details on ADS speakers, see your local ADS dealer. If you don't know who he is, call us at 800-824-7888 (in California, 800-852-7777) operator 483.

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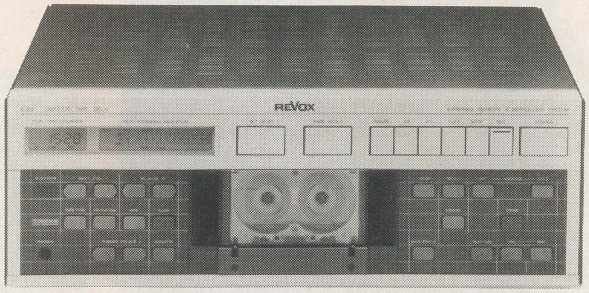
CASSETTE DECKS

TEAC V-770



REVOX B215

TANDBERG TCD 3014A

NAKAMICHI CR-7A

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Frequency Response with CrO_2 Tape (Type II), Hz to kHz, ±dB	Number of Heads	Wow & Flutter, Wtd. Peak, %	S/N without Noise Reduction, –dB	S/N with Noise Reduction, –dB	Noise Reduction Circuit: Dolby B=B, Dolby C=C, dbx=D, HX Pro=H	Continuously Adjustable Bias: Auto=A, Manual=M	Number of Preset Bias/EQ Positions	Program Search?	Program Scan?	Level Indicators: Average=A, Peak=P, Peak-Hold=PH	Counter Indications: Number of Turns=T, Elapsed Time=E, Remaining Time=R	Auto Reverse?	Number of Mike Inputs	Dual Wells?	Weight, Lbs.	Price, $	Notes
ADS	C2	20-18 ±2	2	0.06	58	74	B/C		4	No	No	P	T	No	2	No	18½	500.00	
	C3(RO)	20-20 ±2	3	0.04	58	74	B/C		4	Yes	No	P	T	No	2	No	20	800.00	Has two speeds; specs here at 1⅞ ips.
		25-22 ±2	3	0.035	60	76													Specs here at 3¾ ips.
AIWA	AD-R450U	25-15 ±3	2	0.04	60	78	B/C	M	3	No	No	P	T	Yes	0	No	10	220.00	
	AD-F350U	25-15 ±3	2	0.035	60	78	B/C	M	3	No	No	P	T	No	0	No	9	150.00	
	AD-F250U	25-15 ±3	2	0.038	60	78	B/C	M	3	No	No	P	T	No	0	No	9	120.00	
	AD-WX220U	20-15 ±3	2	0.038	61	78	B/C	M	3	Yes	Yes	P	T	No	1	Yes	12¼	500.00	
	AD-W20U	20-15	2		61	78	B/C	M	3	Yes	Yes	P	T	Yes	0	Yes	12¼	450.00	
	AD-A70	30-14 ±3	2	0.06		78	B/C								0	No	13¼	595.00	
	AD-F990B	20-19 ±3	3	0.025	63	80	B/C/H	A	3	Yes	Yes	PH	T/R	No	2	No	12	595.00	Auto demagnetizing; NR detector.
	AD-F770B	20-18 ±3	3	0.025	63	80	B/C/H	A	3	Yes	Yes	PH	T/R	No	2	No	12	495.00	Auto demagnetizing.
	AD-S40U	20-17 ±3	3	0.028	61	78	B/C/H	M	3	No	No	P	T	No	0	No	10½	330.00	As above.
	AD-S20U	20-17 ±3	3	0.055	61	78	B/C/H	M	3	No	No	P	T	No	0	No	9¼	250.00	As above.
	AD-R650U	20-17 ±3	3	0.035	63	80	B/C/H	M	3	No	No	P	T	No	0	No	11	300.00	As above.
	AD-R550U	20-15 ±2	2	0.038	60	78	B/C/H	M	3	Yes	Yes	P	T	Yes	2	No	11½	320.00	
AKAI	GX-R99	20-19 ±3	4	0.028	60	80	B/C	A/M	2	Yes	Yes	†	T/E/R	Yes	0	No	19	850.00	†Average, peak, and spectrum level indicators.
	GX-9	20-20 ±3	3	0.025	60	80	B/C	A/M	0	Yes	Yes	†	T/E/R	No	0	No	15½	560.00	†Peak and spectrum level indicators.
	GX-8	20-20 ±3	3	0.025	60	115	B/C/D	M	0	Yes	No	PH	T/E/R	No	0	No	14¼	570.00	
	GX-6	20-20 ±3	3	0.025	60	80	B/C	M	0	Yes	No	PH	T/E/R	No	0	No	14¼	530.00	
	GX-R70	20-18 ±3	2	0.05	60	110	B/C/D		0	Yes	No	†	E	Yes	0	No	11½	500.00	†As above.
	GX-R60	20-18 ±3	2	0.05	60	110	B/C/D		0	Yes	No	P	T	Yes	0	No	11	340.00	
	HX-R40	20-18 ±3	2	0.05	59	79	B/C		0	Yes	Yes	P	T	Yes	0	No	9½	250.00	
	HX-A451W	30-15 ±3	3	0.09	57	77	B/C			Yes	Yes	P	T	No	1	Yes	9¾	380.00	Programmable; 15 selections.
	HX-A351W	30-15 ±3	3	0.09	56	66	B			No	No	P	T	No	0	Yes	8¾	235.00	
	GX-A5X	20-18 ±3	2	0.05	60	115	B/C/D			No	No	P	T	No	2	No	9	270.00	
	HX-A3X	20-17 ±3	2	0.05	59	115	B/C/D			No	No	P	T	No	2	No	9	235.00	
	HX-A201	30-16 ±3	2	0.05	56	76	B/C			No	No	P	T	No	2	No	7	140.00	

Teac Compact Disc. HiFi in the extreme.

Teac is not in the habit of building audio equipment for the undiscerning. Rather, we commit ourselves to those few individuals discontented with anything less than the finest recording and sound reproduction equipment money can buy.

Before you stands the remarkable Teac ZD-5000. Perhaps the purest embodiment the compact disc player has yet experienced. A machine with a list of features and specifications so numerous, so advanced as to impress the most jaded audiophile. A machine so refined its output jacks are plated with 24k gold. And when it comes to remote controlled functions, nobody comes remotely close.

The Teac ZD-5000 compact disc player. "Fi" just doesn't get any higher.

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Teac. Hi Fi in the extreme.

For over thirty years Teac has been famous for building precision tape recording equipment. But, we're not willing to rest on our reels. So now Teac offers its most comprehensive line ever. From audio and hi-fi video recording equipment, to compact disc players, to graphic equalizers, speakers, and a complete line of audio and video accessories. One thing, however, will never change at Teac—our obsession with creating the most advanced, featured-filled, superbly executed audio and video equipment we can make. So, no matter what Teac you decide to buy, you can be assured of acquiring a piece that has been built to fanatical standards.

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CASSETTE DECKS

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Frequency Response with CrO_2 Tape (Type II), Hz to kHz, ±dB	Number of Heads	Wow & Flutter, Wtd. Peak, %	S/N without Noise Reduction, –dB	S/N with Noise Reduction, –dB	Noise Reduction Circuit: Dolby B=B, Dolby C=C, dbx=D, HX Pro=H	Continuously Adjustable Bias: Auto=A, Manual=M	Number of Preset Bias/EQ Positions	Program Search?	Program Scan?	Level Indicators: Average=A, Peak=P, Peak-Hold=PH	Counter Indications: Number of Turns=T, Elapsed Time=E, Remaining Time=R	Auto Reverse?	Number of Mike Inputs	Dual Wells?	Weight, Lbs.	Price, $	Notes
BANG & OLUFSEN	Beocord 5500	30-18 ±3	2	0.09	55	74	B/C/H	A	3	Yes	No	P/PH	T	Yes		No	18.4	899.00	Auto Dolby NR, auto record level.
	Beocord 2000	30-15 ±3	2	0.08	56	65	B	A	3	Yes	No	P	T	No		No	9	469.00	
CURTIS MATHES	AK555(RO)	40-14 ±3	3	0.08	56	66	B	A	0	No	No	A	T	No	0	No	7½		
DENON	DR-M10	35-17 ±3	2	0.05		72	B/C	M	3	Yes	No	A	E	No	0	No	12¼	250.00	
	DR-M20	30-19 ±3	2	0.045		73	B/C	M	3	No	No	A	E	No	0	No	12¼	375.00	MPX filter, dual capstan.
	DR-M30HX (RI)	30-20 ±3	3	0.045		73	B/C/H	M	3	No	No	A	E/R	No	0	No	12½	500.00	MPX filter.
	DR-M44HX	25-20 ±3	3	0.035		75	B/C/H	A	3	No	No	A/PH	E/R	No	0	No	12½	650.00	
DUAL	C818	25-18 ±3	2	0.045	60	74	B/C	A	3	No	No	P	T	Yes	1	No	15	300.00	
FISHER	CRW55	40-15 ±3	3	0.06	51	61	B	A		No	No	P	T	No	0	Yes	8.8		High-speed dubbing.
	CRW85	40-15 ±3	3	0.06	51	61	B	A		No	No	P	T	Yes	0	Yes	9.3		As above.
	CRW95	40-15 ±3	3	0.06	51	71	B/C	A		Yes	Yes	P	T	Yes	0	Yes	11.6		As above.
HARMAN/ KARDON	TD102	20-18 ±3	2	0.05	57	65	B		3	No	No	P	T	No	0	No	12¼	295.00	
	TD202	20-18 ±3	2	0.05	57	73	B/C	M	3	No	No	P	T	No	0	No	12¼	345.00	
	TD302	20-21 ±3	2	0.05	57	73	B/C/H	M	3	No	No	P	T	No	0	No	12⅞	500.00	
	TD392	20-22 ±3	3	0.05	57	73	B/C/H	M	3	No	No	P	T	No	0	No	12⅞	700.00	
	CD401	20-24 ±3	3	0.025	58	75	B/C/H	M	3	Yes	No	P/PH	T/E	No	2	No	14⅜	900.00	
HITACHI	DW220	20-16	2	0.1	58	66	B	No	3	No	No	P	T	No	1	Yes	7	240.00	
	DW450	20-16	2	0.07	58	66	B	No	3	No	No	P	T	No	1	Yes	7	250.00	
	DW33	20-15	2	0.08	57	65	B	No	3	No	Yes	P	T	Yes	0	Yes		300.00	
	DW77(RO)	20-16	2	0.04	58	72	B/C	No	3	Yes	Yes	P	T	Yes	0	Yes	10½	500.00	
	DW99(RO)	20-16	2	0.04	58	72	B/C	No	3	Yes	Yes	P/PH	T	Yes	0	Yes	15	700.00	
JVC	TD-V66BK (RO)	20-19 ±3	3	0.038	58	78	B/C	A	3	No	Yes	P/PH	T/E	No	0		10.6		
	TD-X501BK	30-16 ±3	2	0.06	58	78	B/C	M	3	No	Yes	P/PH	T	Yes	2		8.6		
	TD-X301BK	30-15 ±3	2	0.08	58	78	B/C	M	3	No	No	P	T	Yes	2		8.4		
	TD-X201BK	40-15 ±3	2	0.08	58	78	B/C	M	3	No	No	P	T	No	2		7.7		
	TD-X101BK	40-15 ±3	2	0.08	58	68	B	M	3	No	No	P	T	No	2		7.7		
	TD-W60BK	30-16 ±3	3	0.08	58	78	B/C	A	3	No	Yes	P	T	Yes	0	Yes	10.8		
	TD-W30BK	30-16 ±3	3	0.08	58	78	B/C	A	3	No	No	P	T	No	1	Yes	9.5		
KENWOOD	KX-780	22-18 ±3	3	0.05	67	74	B/C	M	3	No	No	P	T	No	2	No	10.6	320.00	
	KX-95W (RO)	20-16	2	0.06	57	72	B/C		3	Yes	Yes	P	T	Yes	0	Yes	11.7	355.00	
	KX-75R (RO)	20-16	2	0.06	56	73	B/C		3	Yes	Yes	P	T	Yes	2	No	8.4	235.00	
	KX-65W	20-16	2	0.09	56	72	B/C		3	Yes	No	P	T	Yes	0	Yes	9.9	270.00	
	KX-55W	20-16	2	0.09	56	64	B		3	No	No	P	T	No	0	Yes	9.9	225.00	
	KX-45C	20-16	2	0.09	56	72	B/C		3	Yes	No	P	T	No	2	No	8.4	165.00	
KYOCERA	D-811(RO)	20-20 ±3	2	0.02	58	78	B/C/H	A/M	3	Yes	No	PH	T/E/R	No	2	Yes	17½	625.00	
	D-611(RO)	20-20 ±3	2	0.035	58	78	B/C	M	3	No	No	P	T	No	2	No	16	485.00	
LUXMAN	K03(RO)	20-20 ±3	3	0.022	60	73	B/C	M	3	Yes	No	P	E/R	No	0		24.6	1200.00	Test oscillator.
	K406(RO)	20-19 ±3	2	0.05	60	71	†	M	3	Yes	Yes	P	E/R	Yes	0		9.9	580.00	†All four NR circuits.
	K106(RO)	20-19 ±3	2	0.05	60	71	†	M	3	Yes	Yes	P	E/R	Yes	0		9.9	580.00	
	K105	30-18 ±3	2	0.06	60	71	B/C/D		3	Yes		P	T	Yes	0		9.9	480.00	
	K100	40-18 ±3	2	0.06	55	70	B/C		3			P	T	No	2		7.7	250.00	
MARANTZ	SD165	40-15	2	0.08	54	64	B		3	Yes	No	P	T	No	2	Yes	10.4	260.00	
	SD265	40-15	2	0.08	54	70	B/C		3	Yes	No	P	T	No	2	Yes	10.4	280.00	
	SD565	35-16.5	2	0.05	55	72	B/C		3	Yes	No	P	T	Yes	1	Yes	11.9	450.00	
MITSUBISHI	DT-156	30-17	5	0.12	58	68	B	A		Yes	Yes	P	T	Yes	0	Yes	8¾	330.00	Seven-cassette auto changer with nine-segment programmability.
NAD	6155	30-20 ±3	2	0.10†	59	77	B/C/H	M	3	No	No	P	T	No	0	No	10½	428.00	†DIN-wtd. "Playtrim" adjustment.
	6240	30-15 ±3	2	0.10†	59	77	B/C	M	3	No	No	P	T	No	0	No	8⅜	298.00	As above.
	6220	40-15 ±3	2	0.2†	55	73	B/C	M	3	No	No	P	T	No	0	No	7½	198.00	
NAKAMICHI	Dragon(RO)	20-21 ±3	3	0.04		72	B/C	M	3			P	T	Yes		No	21	1995.00	
	CR-7A(RI)	18-21 ±3	3	0.048		72	B/C	A	3			P/PH	T/E/R	No		No	19⅞	1495.00	
	CR-5A(RO)	20-20 ±3	3	0.048		72	B/C	M	3			P	T	No		No	18¾	950.00	
	RX-505(RO)	20-20 ±3	3	0.08		70	B/C	M	3	Yes		P	T	Yes		No	22	1195.00	
	RX-202(RO)	20-20	2	0.11		68	B/C		3			P	T	Yes		No	19⅞	650.00	
	BX-300(RO)	20-20 ±3	3	0.048		70	B/C	M	3			P	T	No		No	12⅜	695.00	
	BX-125	20-20	2	0.11		68	B/C		3			P	T	No		No	11	450.00	
	BX-100	20-20	2	0.11		62	B		3			P	T	No		No	11	329.00	
	MR-1(RO)	20-20 ±3	3	0.048		70	B/C	M	3			P	T	No		No		945.00	
	MR-2(RO)	20-20 ±3	2	0.11		68	B/C	M	3			P	T	No		No		559.00	
NEC	K-700E(RO)	20-17 ±3	2	0.06	56	65	B/C		3	Yes	Yes	A/P	T	No	2	Yes	11	349.00	
NIKKO	ND-850W	30-16	4	0.045		73	B/C	M	0	Yes	No	P	T	Yes	1	Yes			
	ND-750	30-16	2	0.045		73	B/C	M	0	Yes	No	P	T	Yes	2	Yes	8.6	300.00	
	ND-350	35-17	2	0.05			B/C	M	3	No	No	P	T	No	2	No			

BEYOND CONVENTIONAL AUDIO

THE ONKYO INTEGRA TA-2058
REAL TIME COUNTER, HX PRO, 3 HEADS, ACCUBIAS PROVIDE PROFESSIONAL QUALITY RECORDINGS

The ONKYO Integra TA-2058 combines the recording quality of a professional deck with an array of sophisticated control features. Our 3 head record & playback system includes a wide gap recording head for superior frequency response and increased headroom. The playback head features a narrower gap, resulting in extended high frequency response, and improved S/N ratio. The third head enables tape monitoring, permitting instant comparison of the source material and your recording.

A computer-controlled Real Time tape counter provides a digital read-out that indicates in minutes and seconds the amount of tape consumed or remaining, eliminating the possibility of running out of tape in the middle of a selection.

Freedom from tape saturation, even at the highest recording levels, is assured by Dolby HX Pro. ONKYO's exclusive Accubias circuit fine tunes recording bias for the flattest and widest response, and an adjustable preset function lets you customize your recordings for playback in other tape machines, like car stereo or portables.

Professional recording and playback qualities are finally available in an affordable deck—the ONKYO Integra TA-2058.

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CASSETTE DECKS

MANUFACTURER	Model (RI)=Remote Included, (RO)=Remote Optional	Frequency Response with CrO_2 Tape (Type II), Hz to kHz, ±dB	Number of Heads	Wow & Flutter, Wtd. Peak, %	S/N without Noise Reduction, –dB	S/N with Noise Reduction, –dB	Noise Reduction Circuit: Dolby B=B, Dolby C=C, dbx=D, HX Pro=H	Continuously Adjustable Bias: Auto=A, Manual=M	Number of Preset Bias/EQ Positions	Program Search?	Program Scan?	Level Indicators: Average=A, Peak=P, Peak-Hold=PH	Counter Indications: Number of Turns=T, Elapsed Time=E, Remaining Time=R	Auto Reverse?	Number of Mike Inputs	Dual Wells?	Weight, Lbs.	Price, $	Notes
ONKYO	TA-2090 (RO)	20-21 ±3	3	0.02	60	85	†	A	3	No	Yes	P	E/R	No	2	No	20	900.00	†All four NR circuits.
	TA-2058 (RO)	20-18 ±3	3	0.045	60	80	B/C/H	A	3	No	Yes	P	E/R	No	2	No	13½	480.00	
	TA-2048 (RO)	20-18 ±3	3	0.045	60	80	B/C	M	3	No	Yes	P	T	No	2	No	13¼	370.00	
	TA-2047 (RO)	20-17 ±3	2	0.045	60	80	B/C	M	3	No	Yes	P	E/R	No	2	No	13¼	330.00	
	TA-R-22	20-16 ±3	2	0.07	58	78	B/C		3	No	Yes	P	T	Yes	2	No	10	250.00	
	TA-2028 (RO)	20-16 ±3	2	0.06	58	78	B/C	M	3	No	Yes	P	T	No	2	No	8½	230.00	
	TA-2017	20-16 ±3	2	0.07	56	76	B/C	M	3	No	No	P	T	No	2	No	7¾	180.00	
	TA-RW99	20-16 ±3	4	0.05	58	78	B/C		3	No	Yes	P	T	Yes	1	Yes	14¼	450.00	
	TA-RW66	20-16 ±3	4	0.07	56	76	B/C		3	No	No	P	T	Yes	1	Yes	11¾	320.00	
	TA-W55	25-16 ±3	4	0.07	56	66	B		3	Yes	No	P	T	No	1	Yes	11¾	260.00	
PARASOUND	CD 400	20-18	2	0.05	65	73	B/C	M	3	Yes	No	P	T	No	2	No	14	229.95	
	CDD 940	20-16.5 ±1	2	0.07	58	77	B/C/H	No	3	No	No	P	E	No	0	No	16	499.95	CD player/cassette deck; see also "Compact Disc Players."
PIONEER	CT-S22	30-15	2	0.07	57	73	B/C	M	3		No	A	T	No	2	No	7.8	129.95	
	CT-S11	30-15	2	0.07	57	73	B/C	M	3		No	A	T	No	2	No	7.1		
	CT-A9X Elite	20-22	3	0.018	58	74	B/C	A	0	Yes	No	A	R	No	0	No	21.1	799.95	
	CT-A7X Elite	20-20	3	0.028	57	73	B/C	A	0	Yes	No	A	T	No	0	No	17.7	499.95	
	CT-1370WR (RI)	20-17	4	0.06	57		B/C	A	0	Yes	No		T	Yes	0	Yes	12.1	449.95	
	CT-1270WR	20-15.5	3	0.07	57		B/C	M	3	No			T	Yes	0	Yes	11	289.95	
	CT-1170W	30-15	3	0.075	56		B/C	M	3	No			T	No	0	Yes	10.2	229.95	
	CT-S88R	25-17	2	0.055	57		B/C/D	A	0	Yes	No	PH	T	Yes	2	No	12.5	324.95	
	CT-2070R	25-16	2	0.07	58	92	B/C/D	M	3	No			T	Yes	0	No	8.1	259.95	
	CT-S44	30-15	2	0.07	57	92	B/C/D	M	3	No	No	A	T	No	2	No	7.1	174.95	
	CT-V70	25-18	4	0.06	57	92	B/C/D	A	0	Yes			T	Yes	0	Yes	14.2	485.00	
PROTON	740	25-18 ±3	2	0.05	54	62	B/C/D	A		Yes		P	E/R	Yes			11⅛	329.00	
	730R(RO)	30-16 ±3	2	0.1			B/C	A		Yes		P	T/E/R	Yes	0		"	299.00	
	720B	40-15 ±3	2	0.15	50	68	B/C	A				P	T					199.00	
RCA	MTR 115 (RO)	50-15 ±3	2	0.05	58	73	B/C	A	3	No	No	P	T	No	2	No	9	249.00	
	MTR 118 (RO)	40-17 ±3	2	0.06	59	74	B/C	A	3	Yes	Yes	P/PH	T	Yes	2	No	10	299.00	
	Dimensia MTR 120 (RO)	40-17 ±3	2	0.06	59	74	B/C	A	3	Yes	Yes	P/PH	T	Yes	2	No	10	299.00	
REALISTIC	SCT-82																	220.00	
	SCT-100															Yes		230.00	
	14-649															Yes		180.00	
	SCT-45															Yes	"	120.00	
REVOX	B215(RO)	30-20 +2, -3	3	0.1	58	72	B/C/H	A	6	Yes	No	P	E	No	0	No	20¼	1590.00	
ROTEL	RD-850	30-18 ±3	2	0.08	60	72	B/C		3	No	No	P	T	No	2			229.00	
	RD-870	30-21 ±3	2	0.03	65	74	B/C/H	M	3		No	P	T	No	0			499.00	
SAE	C102	20-20 ±3	2	0.06		72	B/C	A	3	Yes	No	A/PH	T/E/R	No	0	No	24	429.00	Drawer-load transport.
	C101(RO)	20-20 ±3	3	0.04		74	B/C	M	4	No	No	A/PH	T/E/R	No	0	No	22	650.00	
SANSUI	D-905R	20-21	3	0.034	60	74	B/C	A	3	Yes	Yes	P	T/E/R	Yes	0	No	11.9	900.00	
	D-W10	20-18	2	0.05	57	73	B/C	A	3	Yes	Yes		T	Yes	1	Yes	13.4	600.00	
	D-95WR	20-17	2	0.06	54	74	B/C	A	3	Yes	Yes		T	Yes	0	Yes	11.9	500.00	
	D-E750	20-17	2	0.06		72	B/C	A	3	Yes	No		T	No	0	Yes	11.5	500.00	
	D-705	20-21	3	0.035	60	74	B/C	A/M	3	Yes	No	P	T	No	0	No	13	470.00	
	D-75CW	20-17	2	0.06	54	74	B/C	A	3	Yes	No		T	No	0	Yes	9.3	400.00	
	D-505R	20-19	2	0.045	58	72	B/C	A	3	Yes	No	P	T/E	Yes	0	No	11.3	370.00	
	D-505	20-19	2	0.045	58	72	B/C	A	3	Yes	No	P	T	No	0	No	10.6	320.00	
	D-65CR	20-17	2	0.05	54	74	B/C	A	3	Yes	No		T	Yes	1	No	8.6	330.00	
	D-70CW	20-17	2	0.06	54	72	B/C	A	3	No	No		T	No	0	Yes	9	300.00	
	D-E350	20-16	2	0.12		64	B	A	3	No	No		T	No	0	Yes	7.1	240.00	
	D-70BW	20-17	2	0.06	54	64	B	A	3	No	No		T	No	0	Yes	8.8	240.00	
	D-35CF	20-17	2	0.06	54	64	B/C	A	3	Yes	No		T	No	1	No	7.3	230.00	
	D-35BF	20-17	2	0.06	54	74	B	A	3	No	No		T	No	1	No	7.3	200.00	
SANYO	RDS29	40-15	2	0.1	54	62	B	M	0	No	No	A	T	No	1	No	5½		
	RDW39	40-14	2	0.15	50	60	B	M	0	No	No	A	T	No	1	No	7		
	RDW49	40-16	4	0.1	57	65	B	M	0	No	No	A	T	No	0	Yes	3⅝		
	RDW79	40-16	4	0.1	57	65	B	M	0	No	No	A	T	Yes	0	Yes	4		
SCOTT	DD686	30-14 ±3	2	0.08		70	B/C		3	No	No	P	T	No	0	Yes		199.95	High-speed dubbing.
	DD656	40-14 ±3	2	0.15		61	B		3	No	No	P	T	No	0	Yes		149.95	As above.
SEARS	9324	40-14 ±3	4	0.1	50	70	B/C	M	3	No	No	P	T	No	2	Yes		150.00	
	9320	40-14 ±3	4	0.1	50	60	B	M	3	No	No	P	T	No	2	Yes		100.00	
SHARP	RT-115	50-12 ±3	2	0.1	52		B	A	3	No	No	A	T	No	0	No	5½	79.95	
	RT-W500	50-12 ±3	2	0.12	52		B	A	3	No	No	A	T	No	2	Yes	7⅜	119.95	
	RT-W800	40-16 ±3	2	0.08	56		B	A	3	Yes	No	A	T	Yes	2	Yes	8⅞	219.95	

TO FIND OUT WHAT NORMAL HANDLING COULD DO TO YOUR CDs,

SCRATCH HERE:

You may not see anything wrong, but you'll quickly hear it. Even ordinary handling can result in scratches on the "print" surface of your compact discs, producing dropouts which cause skipping—rendering them unplayable. But there's a way out of this scrape.

No other cleaner in the world beats Recoton's CD-11 Compact Disc Radial Cleaner—winner of the 1985 Audio/Video International Grand Prix Award for Design and Engineering. It cleans your compact discs the way manufacturers recommend: in a straight line—across the radius—from the center of the disc to the outer edge.

By removing dirt, dust and film across the surface with an ultrasoft chamois pad, Recoton's true radial cleaning action significantly reduces the causes of distortion and drop-outs. The results are pure sound and error-free reading of digitally encoded music information.

And to ensure longer lasting pleasure from your compact discs, ask your dealer about the complete line of Recoton accessories. Like our superb non-corrosive cleaning solution and unique surface restoring scratch filler solution. Plus protective shields for permanent safeguarding of your compact discs.

Before you get into a real scrape with ordinary compact disc cleaners, get the award winning performance of Recoton.

RECOTON®

46-23 CRANE STREET, LONG ISLAND CITY, NY 11101.

Enter No. 66 on Reader Service Card

CASSETTE DECKS

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Frequency Response with CrO_2 Tape (Type II), Hz to kHz, ±dB	Number of Heads	Wow & Flutter, Wtd. Peak, %	S/N without Noise Reduction, –dB	S/N with Noise Reduction, –dB	Noise Reduction Circuit: Dolby B = B, Dolby C = C, dbx = D, HX Pro = H	Continuously Adjustable Bias: Auto = A, Manual = M	Number of Preset Bias/EQ Positions	Program Search?	Program Scan?	Level Indicators: Average = A, Peak = P, Peak-Hold = PH	Counter Indications: Number of Turns = T, Elapsed Time = E, Remaining Time = R	Auto Reverse?	Number of Mike Inputs	Dual Wells?	Weight, Lbs.	Price, $	Notes
SHERWOOD	S-270DD	30-16	3	0.1	56	65	B	M	3	No	No	A	T	No	2	Yes	14	249.95	
	S-260R	25-16.5	2	0.08	56	73	B/C	M	3	Yes	Yes	A	T	Yes	2	No	14	279.95	
	S-160	30-16	2	0.08	56	73	B/C	M	3	Yes	Yes	A	T	No	2	No	12	199.95	
SONY	TC-WR930 (RO)	30-16 ±3	4	0.045	58	71	B/C		3	Yes	No	P	E	Yes	0	Yes	14	600.00	
	TC-WR730 (RO)	30-15 ±3	3	0.07	57	70	B/C		3	Yes	Yes	P	T	Yes	0	Yes	11½	370.00	
	TC-W530 (RO)	30-15 ±3	3	0.07	57	70	B/C		3	No	No	P	T	No	0	Yes	11½	250.00	
	TC-W230 (RO)	30-14 ±3	3	0.12	56	69	B/C		3	No	No	P	T	No	0	Yes	10	180.00	
	TC-R502 (RO)	30-17 ±3	2	0.05	58	71	B/C/H		3	Yes	Yes	P	E	Yes	0	No	10¼	450.00	
	TC-R302 (RO)	30-15 ±3	2	0.07	57	70	B/C		3	No	No	P	T	Yes	2	Yes	8½	220.00	
	TC-FX430	30-14 ±3	2	0.08	56	69	B/C		3	No	No	P	T	No	2	Yes	7½	150.00	
	TC-K444ESII (RO)	30-18 ±3	3	0.004	60	72	B/C	M	3	No	No	PH	E	No	0	No	15¾	450.00	
TANDBERG	TCD 3014A (RI)	18-20 ±1.5	3	0.06	72	80	B/C	M	3	Yes	Yes	P	T/E	No	0	No	21.6	1595.00	
TEAC	R-505	20-18	2	0.05	59	74	B/C		3	Yes	No	P	T/E	Yes	2	No	11	399.00	
	R-435X	30-17	2	0.06	55	90	B/C/D		3	No	No	P	T/E	Yes	2	No	9	299.00	
	W-880RX	25-20	2	0.05	59	91	B/C/D		3	Yes	Yes	P	T	Yes	0	Yes	14¼	799.00	
	W-660R	25-19	2	0.05	59	78	B/C		3	Yes	No	P	T	Yes	0	Yes	12	599.00	
	W-460	25-19	2	0.05	59	78	B/C		3	Yes	No	P	T	No	0	Yes	11	549.00	
	W-440CGL	25-17	2	0.06	59	74	B/C		3	No	No	P	T	No	1	Yes	11	468.00	
	D-525C	30-17	2	0.06	55	70	B/C		3	No	No	P	T	No	2	Yes	10	349.00	
	V-850X(RO)	25-19	3	0.03	60	92	B/C/D	M	3	Yes	Yes	P	T/E	No	2	No	12¾	599.00	
	V-770	25-19	3	0.05	59	74	B/C/H	M	3	Yes	Yes	P	T/E	No	0	No	10⅞	469.00	
	V-550X	20-19	2	0.05	59	90	B/C/D	M	3	Yes	Yes	P	T/E	No	2	No	11	429.00	
	V-538X	30-16	2	0.06	55	90	B/C/D	M	3	No	No	P	T	No	2	No	9	239.00	
	V-437C	30-16	2	0.06	55	70	B/C	M	3	No	No	P	T	No	2	No	9	189.00	
	R-888X(RO)	20-20	3	0.029	60	92	B/C/D	M	3	Yes	Yes	P	T/E	Yes	0	No	13¼	799.00	
	R-606X	20-18	2	0.05	59	90	B/C/D	M	3	Yes	Yes	P	T/E	Yes	2	No	11	499.00	
	AD-7(RI)	25-19	2	0.05	57	91	B/C/D	M	3	Yes	No	P	T	Yes	0	No		999.00	CD player/cassette deck; see also "Compact Disc Players."
TECHNICS	RS-B105	20-15	2	0.08	56	66	B		3	No	No	P	E	No	2	No	6.6	140.00	
	RS-B107	20-15	2	0.08	57	74	B/C		3	No	No	P	E	No	2	No	7.5	175.00	
	RS-B207	20-15	2	0.08	57	92	B/C/D		3	No	No	P	E	No	2	No	7.5	200.00	
	RS-T10	20-15	3	0.08	56	66	B		3	No	No	P	E	No	0	Yes	8.4	180.00	Series play.
	RS-T20K	20-15	3	0.08	56	74	B/C		3	No	No	P	E	No	0	Yes	8.4	220.00	High-speed editing.
	RS-B29R	20-17	2	0.08	57	75	B/C		3	No	No	P	E	Yes	2	No	7.9	260.00	
	RS-B78R	20-19	2	0.045	58	92	B/C/D		3	Yes	No	PH	E/R	Yes	1	No	11.7	400.00	
	RS-T60R	30-17	3	0.08	57	75	B/C		3	No	No	P	E	Yes	0	Yes	10.4	395.00	Quick reverse.
	RS-T80R	30-17	4	0.08	57	92	B/C/D		3	No	No	P	E	Yes	0	Yes	11.7	550.00	As above.
	RS-B85	30-19 ±3	3	0.05	60	92	B/C/D		3	No	No	PH	E/R	No	0	No	11.5	550.00	
	RS-B100	20-21 ±3	3	0.022	60	92	B/C/D		3	No	No	PH	E/R	No	0	No	12.3	1000.00	
UHER	CR 160AV	30-16 ±1	2	0.2	55	64	B/C	M	4	No	No	P	T	No	2	No	7	899.00	Sync. sound dubbing; portable.
	CR 260AV	30-16 ±1	3	0.2	58	64	B	A	4	No	No	P	T	Yes	2	No	7	1299.00	As above.
	CR 160	20-19 ±1	3	0.2	50				4	Yes	Yes	P	T	No	1	No	7	1699.00	Eight-hour record time; three speeds; portable.
ULTRX	RDW201	31.5-14 ±3	2	0.1 wrms	52	72	B/C	A	3	No	No	P	T	No	2	Yes	5.1	129.95	
	RDR31	31.5-13 ±3	3	0.08 wrms	50	60	B	M	3	No	No	P	T	Yes	2	No	9.7	89.95	
	RDR51	31.5-14 ±3	3	0.05 wrms	52	72	B/C	A	3	No	No	P	T	Yes	2	No	9.7	139.95	
	RDC21	20-15		0.06 wrms	57	92	B/C/D										7⅜		
	RDC41	20-18		0.06 wrms	58	92	B/C/D										8		
	RDR51	30-16 ±3		0.05 wrms	52	72	B/C										9¾		
	RDC61	20-20		0.05 wrms	58	93	B/C/D										8¼		
	RDC11	20-16		0.06 wrms	57	75	B/C										6⅞		
	RDR81	20-19		0.04 wrms	58	92	B/C/D										9¼		
VECTOR RESEARCH	VCX-250	30-18 ±3	2	0.05	56	74	B/C		3	Yes		P	T	No	2	No	14	199.95	
	VCX-350	30-18 ±3	2	0.05	56	74	B/C		3	No	No	P	T	No	2	Yes	15	229.95	
	VCX-450	30-18 ±3	2	0.04	56	75	B/C		3	Yes	No	P	T	Yes	2	No	18	329.95	
	VCX-650	20-21 ±3	3	0.04	57	76	B/C		3	Yes		P	T	No	2	No	20	449.95	
YAMAHA	K-1020	20-20 ±3	3	0.06	59	95	†	M	3	Yes	No	P	E	No	0	No	16¾	649.00	†All four NR circuits.
	K-540	25-19 ±3	2	0.08	59	74	B/C/H		3	Yes	Yes	P	E	No	0	No	9¾	329.00	
	K-340	30-19 ±3	2	0.08	59	74	B/C/H		3	Yes	Yes	P	T	No	0	No	9¼	249.00	
	K-220	40-16 ±3	2	0.15	59	74	B/C		3	No	No	P	T	No	0	No	8¾	199.00	
	K-140	30-15 ±3	2	0.15	58	65	B		3	No	No	P	T	No	0	No	7¾	169.00	
	K-720	30-19 ±3	2	0.08	59	90	†		3	Yes	Yes	P	E/R	Yes	2	No	12½	479.00	
	K-600	30-18 ±3	2	0.08	59	75	B/C		3	Yes	Yes	P	E/R	Yes	2	No	11½	369.00	
	K-420	40-16 ±3	2	0.15	59	74	B/C		3	Yes	No	P	T	Yes	0	No	8½	269.00	
	K-222	30-15 ±3	2	0.15	58	74	B/C		3	Yes	No	P	T	No	0	Yes	10½	299.00	
	K-142	30-15 ±3	2	0.15	58	66	B		3	No	No	P	T	No	0	Yes	8½	229.00	

BLANK TAPE

CASSETTE TAPE TYPE CODE
I — Normal Ferric
II — Chrome/Chrome Equivalent
IV — Metal Particle

MANUFACTURER	Brand	Tape Type—See Code	CASSETTES C-30	C-45 or C-46	C-60	C-90	C-120	OPEN-REEL 1200 Feet	1800 Feet	2400 Feet	3600 Feet	Notes
ADAMS MAGNETIC	Studio-EC	I	1.59	1.69	1.79	1.99						
	Studio-SCF	I	2.59	2.69	2.79	2.99						
	Studio-SCR	II			3.99	4.19						
	Super Chrome											True chromium dioxide.
AUDIO-TECHNICA	Sound Guard	I			3.49	4.29						
BASF	LH-EXI	I			1.49†	1.79†						†Two-packs: C-60, $2.99; C-90, $3.39. Four-packs: C-90, $10.99.
	LH-MI	I			1.99†	2.49†						†Two-packs: C-60, $3.89; C-90, $5.09.
	Chrome Extra II	II			2.59†	3.29†						†Two-packs: C-60, $4.89; C-90, $6.49. Four-packs: C-90, $12.59.
	Chrome Maxima II	II			3.29	4.29						
	Metal IV	IV					6.99					
CERTRON	UX	I			2.99†	3.99†						†Two-pack.
	HD	I	1.19	1.29	1.39†	1.79†	2.49					†Three-packs: C-60, $3.99; C-90, $4.99.
	LN	I			1.99†	2.99†						†Three-pack.
DENON	HD-M	IV			5.00	6.50						
	HD-8	II			3.75	4.75						
	HD-7	II			3.00	4.00						
	HD-6	II			2.50	3.25						
	DX-4	I			3.00	4.00						
	DX-3	I			2.50	3.00						
	DX-1	I			1.75	2.25						
DIRECT-TO-TAPE RECORDING	Direct II	II			3.75†	4.50††						†C-68. ††C-96.
	Direct I	I			2.95†	3.50††						†C-66. ††C-96.
	API	I					3.70					No labels; supplied with box.
	Agfa PEM 369								10.70			1.0-mil mastering tape.
	Agfa PEM 469							9.00				
	Ampex 642								6.20			
	Ampex 407								11.00			
	Ampex 456							9.50				
FUJI	FR Metal	IV		5.79	6.39	8.49						
	FR-II Super	II		4.39	4.89	6.49						
	FR-II	II		3.99	4.49	5.99						
	FR-I Super	I		3.79	4.19	5.49						
	FR	I		2.69	2.99	3.99						
	DR	I		2.39	2.59	3.49	4.99					
	GT-II	II		4.39	4.89	6.49						
	GT-I	I		3.79	4.19	5.49						
LORAN	Loran	II		2.99	3.49	3.99						
MAXELL	UR	I		1.45	1.56	1.80	2.71					
	UDS	I		2.30	2.50	3.24						
	UDS	II		2.30	2.50	3.24						
	XL	II		3.14	3.24	3.87						
	XLS	I			3.77	4.82						
	XLS	II			3.77	4.82						
	MX	IV			4.61	6.18						
	XLII								16.68		45.56	
	XLI							10.70	12.59	32.43	35.16	
	UD							8.70	9.02	27.60	27.92	
MEMOREX	HBX	II			2.59	3.49						
	CDX	II				4.49						
	MRX I	I	1.89	1.99	2.19	2.69	3.59					
	HB II	II			2.29	2.79						
	dB	I			1.49	1.79						
NAKAMICHI	ZX	IV			7.25	10.00						
	SX II	II			6.50	8.90						
	SX	II			4.50	6.50						
	EX II	I			4.25	6.00						
PANASONIC	RT-60EN2	I			3.95†							†Two-pack.
	RT-90EN2	I				5.45†						
	RT-90EX2	II				9.95†						
	RT-60FS2	I			5.45							
RAKS	High Dynamic	I		1.09	1.59	2.19						
	High Dynamic I	I		1.39	1.89	2.59						
	High Dynamic II	II		1.89	2.09	3.09						
	High Dynamic Extended	I		1.29	1.79	2.39						
	High Dynamic Extended I	I		1.59	2.09	2.79						
	High Dynamic Extended II	II		2.09	2.29	3.39						
REALISTIC	44-950	II			4.89							
	44-960	II			5.69							
	44-940	I			3.50							
	44-941	I				4.23						
	44-921	I			2.79							
	44-922	I				3.79						

WE'VE DESIGNED A TDK AUDIO CASSETTE THAT'S JUST RIGHT FOR YOUR NEEDS.

BIAS
NORMAL
POSITION TYPE I
EQ 120 μs

AD-X APPLICATION: For music with extended dynamic range, such as modern jazz, chamber, progressive rock or disco recorded live, from FM or LPs. Record on home component systems, integrated systems.
SPECIAL FEATURES: First normal bias Avilyn formulation for a wider dynamic range with superior MOL.

AD-S APPLICATION: For music with a hotter high end; from rock to pop to mellow classical. Especially well suited for car stereos. Record on home components, integrated systems.
SPECIAL FEATURES: Rigid plastic C-Thru™ mechanism provides resonance control for sharp, undistorted recording and playback.

AD APPLICATION: For music such as easy listening, pop, contemporary or new wave, older discs. Record on mid-range and economy component systems.
SPECIAL FEATURES: Linear ferric magnetic particles for smooth and natural reproduction.

D APPLICATION: For music recorded from radio or records; voice recorded from speeches, lectures, interviews, or conversation. Record on home tape deck systems or battery powered portable recorders.
SPECIAL FEATURES: The all-purpose premium performance cassette in the widest assortment of lengths.

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BIAS
HIGH
POSITION TYPE II
EQ 70 μs

HX-S APPLICATION: For music with consistent dynamics and extended high/low frequencies, such as chamber, progressive rock, jazz or disco recorded live, from quality LPs, digitally sourced materials or master tape. Record on home component systems.
SPECIAL FEATURES: First metal formulation for high-bias recording from digitally sourced materials.

SA-X APPLICATION: For music with broad dynamic range such as opera, symphonic, chamber, progressive jazz, soul or rock recorded live, from quality LPs, digitally sourced materials or master tape. Record on high performance component systems.
SPECIAL FEATURES: First high-bias, dual layer Avilyn formulation for improved frequency response. SA-X is the quietest tape in its class.

SA APPLICATION: For music with great dynamic range, LP dubbing. Record on home component systems. It is the world's most popular high-bias cassette.
SPECIAL FEATURES: The ideal high-bias cassette for all recording applications.

TDK
THE ART OF PERFORMANCE.

Enter No. 77 on Reader Service Card

BIAS
METAL
POSITION TYPE IV
EQ 70 μs

MA-XG APPLICATION: The ultimate metal tape formulation for unmatched reproduction of classical, progressive jazz and contemporary pop music. Delivers optimum performance when reproducing digitally sourced materials.
SPECIAL FEATURES: New three-layer vibration-dampening mechanism virtually eliminates sympathetic vibration and provides ultra-precise tape travel.

MA-R APPLICATION: For orchestral and operatic music with exceptional dynamic range recorded from high-quality LPs, digitally sourced materials or master tape.
SPECIAL FEATURES: Generally recognized as the type IV industry standard used by most deck manufacturers to set their metal bias position.

MA-X APPLICATION: For classical/chamber, jazz and contemporary music where a richer, higher, wider dynamic range is needed to reproduce high quality LPs, digitally sourced materials or master tape.
SPECIAL FEATURES: New vibration-dampening mechanism virtually eliminates modulation vibration for pure undistorted sound.

MA APPLICATION: For classical music with broad dynamic range recorded from quality LPs or compact digitally sourced materials.
SPECIAL FEATURES: Extremely high coercivity and remanence for superior sound reproduction with super-wide dynamic range.

TDK QUALITY CASSETTES ELIMINATE THE QUESTION OF WHICH BRAND TO BUY.

HD-PRO

VHS	BETA
T120	L500 L750

BET Value 45m²/g

TDK HD-PRO is a super high definition ½" video cassette for the most demanding recording requirements. Perfect for live performance, video cameras, editing, duplicating, and archival use.

SPECIAL FEATURES: Substantial improvements in luminance and chrominance signal-to-noise ratios, plus a dropout count that is virtually superior to all other ½" video cassettes make TDK HD-PRO the ultimate video cassette for your most demanding performance requirements. A precision SQ cassette mechanism assures optimum tape transport, tracking, and alignment.

WHAT IS BET VALUE? BET value is the measure that indicates the fineness of the magnetic particles contained on a tape expressed in units of square meters per gram (m²/g).

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HI-FI

VHS	BETA
T60 T120	L500 L750

BET Value 35m²/g

TDK HI-FI meets the most critical performance requirements of today's most sophisticated HI-FI Stereo VCRs. It delivers optimum performance for all stereo audio/video applications, including MTS Stereo videocasts, dubbed music videos, and live music.

SPECIAL FEATURES: Significant advances in audio frequency response from 20 to 20,000Hz and sensitivity (+1dB) deliver clean, natural, more dynamic sound. Luminance signal-to-noise ratio improvements of +5.0dB assure crystal clear, lifelike reproduction.

E-HG

VHS	BETA
T60 T120 T160	L500 L750 L830

BET Value 35m²/g

TDK E-HG is a high resolution video cassette designed to meet the critical demands of today's long-playing VCRs. Perfect for TV specials, concerts and movies. Ideal for video library applications.

SPECIAL FEATURES: TDK E-HG delivers brighter, sharper pictures with a luminance signal-to-noise ratio improvement of +3.0dB. Plus chrominance signal-to-noise ratio improvements of +5.0dB and RF output level improvements of +2.5dB. TDK's HDD binder system and SQ cassette mechanism assure improved performance, reliability and durability, extended tape life and reduced dropout levels.

HS

VHS	BETA
T30 T60 T120 T160	L500 L750

BET Value 25m²/g

TDK HS is a new high-performance, high standard video cassette specifically designed for today's VCRs. Perfect for time-shifting TV programs and live-action taping, HS delivers a higher standard of performance with improved picture clarity and color fidelity.

SPECIAL FEATURES: Ultrafine Super Avilyn particles with denser particle packing deliver greater picture clarity with a luminance signal-to-noise ratio improvement of +3.0dB. TDK's HDD binder system provides improved performance, reliability and durability for extended tape life and reduced dropout levels.

VHS-C

TC-20

BET Value 35m²/g

TDK VHS-C is a superb tape formulation designed to deliver optimum video and audio performance in all VHS-C format systems. Perfect for camcorder taping of vacations and on the spot events like sports and concerts.

SPECIAL FEATURES: VHS-C features TDK's acclaimed extra high grade (E-HG) formulation which delivers substantial improvements in both audio and video performance compared to standard tapes. Play after play you'll faithfully reproduce the action with vibrant colors and crisp, clear audio to match. And TDK's super precision cassette mechanism assures unsurpassed reliability and dependability.

8mm

MP30 MP60 MP90 MP120

BET Value 55m²/g

TDK 8mm video cassettes deliver the most impressive picture ever, with four times the magnetic energy of any ½" video tape you can buy. Ideal for live-action recording, TDK 8mm video cassettes add a bold, bright new dimension to home movies.

SPECIAL FEATURES: TDK's 8mm formulation provides superior recording density, higher magnetic coercivity and higher signal retention to deliver sharper, clearer colors and crisp, clean sound. Encased in a Super Precision cassette shell mechanism.

TDK®
THE ART OF PERFORMANCE.

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BLANK TAPE

CASSETTE TAPE TYPE CODE
I — Normal Ferric
II — Chrome/Chrome Equivalent
IV — Metal Particle

MANUFACTURER	Brand	Tape Type—See Code	CASSETTES C-30	C-45 or C-46	C-60	C-90	C-120	OPEN-REEL 1200 Feet	1800 Feet	2400 Feet	3600 Feet	Notes
SONY	HF	I		2.05	2.25	3.15	4.05					
	HF-S	I			3.10	4.25						
	UX	II			4.10	5.50						
	UX-S	II			4.75	6.95						
	UX-ES	II			5.25	7.95						
	UX-PRO	II			7.95	9.95						
	Metal-ES	IV				11.95						
SWIRE MAGNETICS	Laser XL	I			1.49	1.89	2.49					
	Laser UHD-I	I			1.99	2.59						
	Laser UHD-II	II			1.99	2.59						
TDK	D	I	1.70	1.80	1.90	2.20	3.20					
	AD	I			2.40	3.30						
	AD-S	I				3.50						
	AD-X	I			3.00	4.30						
	SA	II			2.40	3.30						
	SA-X	II			3.90	5.50						
	HX-S	II			5.20	7.00						
	MA	IV			5.20	7.00						
	MA-X	IV			6.00	8.00						
	MA-R	IV			7.00	9.40						
	SA/EE								12.50		32.80	
	GX							8.60	10.10	23.40	27.30	
TEAC	CDC	I			5.75	6.00						Miniature open-reel type.
	CRC	II			5.95	6.50						As above.
	HDX	II			3.95	5.00						
	MDX	IV			4.75	6.30						
	Sound 52	I		5.00†								†C-52. As above.
	Studio 52	IV		6.50†								As above.
TRIAD	F/X	I				3.39						
	EM/X	II				3.99						
	MG/X	IV				4.99						
VISA	Hi-Perf. I	I			1.59	1.99						
	Extra-Perf.	II			1.99	2.49						
	UFX-I	I			2.99	3.99						
	UCX-II	II			2.99	3.99						
	UCX-II-S	II			3.49	4.99						
	FDX-I	I			1.99	2.79						
	CX-II	II			2.49	3.49						

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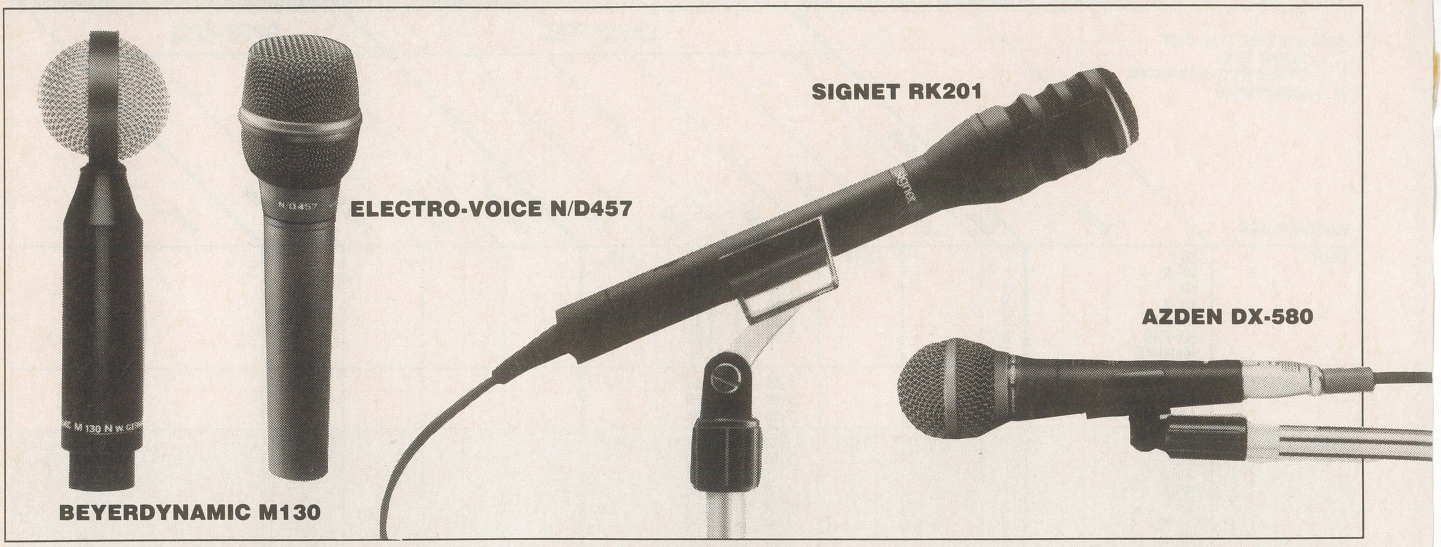
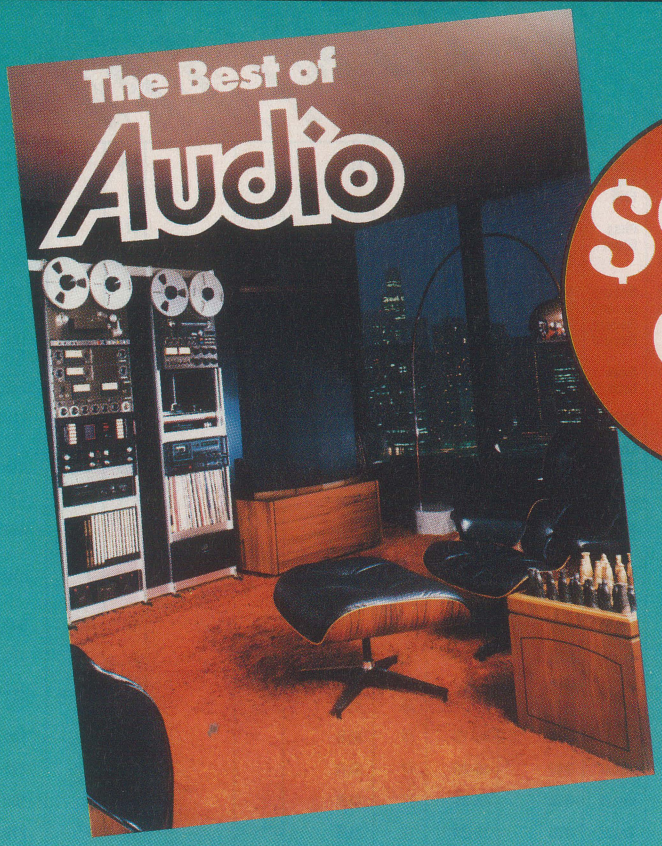
MICROPHONES



MANUFACTURER	Model	Directional Pattern Plus Channels; Stereo = x2, Quad = x4, M-S = M-S	Operating Principle	Case Material	Most Common Use	Actual Impedance, 1 kHz, Ohms; Balanced = B	Operating Range, Hz to kHz	Open-Circuit Sensitivity, 1 kHz, – dB, re: 1 Volt/1 µbar	Mike Connector Type	Cable Length, Feet	Connector Type on Equipment End of Cable	Weight, Ounces	Wind Screen = W, On/Off Switch = S, Switched Low or Proximity Filter = F	Price, $	Notes
AKG	C-34	Multiple x2	Condenser	Zinc Alloy	Orch.	200B	20-20	67	12-Pin	60	XLR	10	W	1750.00	Remote pattern control.
	C-422	Multiple x2	Condenser	Zinc Alloy	Orch.	200B	20-20	65	12-Pin	60	XLR	15	W	2650.00	As above.
	The AKG Tube	Multiple	Condenser	Zinc Alloy	Studio	200B	20-20	60	12-Pin	60	XLR	24	W	1800.00	As above.
	C-414EB/P48	Multiple	Condenser	Zinc Alloy	Studio	200B	20-20	61	XLR			10	WF	895.00	Four patterns; attenuator and pattern switches.
	C-451E/CK-1	Card.	Condenser	Zinc Alloy	Studio	200B	20-20	60.5	XLR			3⅜		380.00	Modular system.
	C-451EB/CK-1	Card.	Condenser	Zinc Alloy	Studio	200B	20-20	60.5	XLR			3¾	F	430.00	As above.
	C-460B/CK-61 ULS	Card.	Condenser	Zinc Alloy	Studio	500B	20-20	62	XLR			5½	F	485.00	As above.
	C-460B/CK-62 ULS	Omni	Condenser	Zinc Alloy	Studio	500B	20-20	62	XLR			5½	F	485.00	As above.
	C-460B/CK-63 ULS	Hyper Card.	Condenser	Zinc Alloy	Studio	500B	20-20	62	XLR			5½	F	485.00	As above.
	C-460B/CK-1X	Card.	Condenser	Zinc Alloy	Studio	500B	20-20	62	LEMO	10	XLR	5½	F	650.00	As above.
	C-451EB/CK-9	Super Card.	Condenser	Zinc Alloy	Studio	200B	20-20	59	XLR			4	F	895.00	As above, with long shotgun.
	C-451EB Preamp		Condenser	Zinc Alloy	Studio	200B	20-20		XLR			3	F	290.00	Modular preamp.
	C-460B Preamp		Condenser	Zinc Alloy	Studio	500B	20-20		XLR			4½	F	350.00	As above.
	CK-1	Card.	Condenser	Zinc Alloy	Studio	†	20-20	60	†			1		130.00	†See C-460B preamp (above).
	CK-1S	Card.	Condenser	Zinc Alloy	Studio	†	20-20	60	†			1		130.00	
	CK-1X	Card.	Condenser	Zinc Alloy	Studio	†	20-20	62	LEMO	10	†	1⅛		180.00	
	CK-2X	Omni	Condenser	Zinc Alloy	Studio	†	20-20	62	LEMO	10	†	1⅛		180.00	
	CK-3	Hyper Card.	Condenser	Zinc Alloy	Studio	†	20-20	61	†			1		130.00	
	CK-3X	Hyper Card.	Condenser	Zinc Alloy	Studio	†	20-20	61	LEMO	10	†	1⅛		180.00	
	CK-5	Card.	Condenser	Zinc Alloy	Studio	†	20-20	60	†			4		240.00	
	CK-8		Condenser	Zinc Alloy	Studio	†	20-20	54	†			2½		230.00	Short shotgun.
	CK-8X	Super Card.	Condenser		ENG			59	LEMO	10	XLR	4¼		300.00	As above.
	CK-9	Super Card.	Condenser	Zinc Alloy	Studio	††	20-20	59	††			12	W	280.00	††See C-451EB preamp (above). Long shotgun.
	CK-22	Omni	Condenser	Zinc Alloy	Studio	††	20-20	62	††			1½		130.00	
	CK-61-ULS	Card.	Condenser	Zinc Alloy	Studio	†	20-20	62	†			1		150.00	
	CK-62-ULS	Omni	Condenser	Zinc Alloy	Studio	†	20-20	62	†			1		150.00	
	CK-63-ULS	Hyper Card.	Condenser	Zinc Alloy	Studio	†	20-20	62	†			1	F	150.00	
	C-535EB	Card.	Electret	Zinc Alloy	Vocal	200B	20-20	61	XLR			10	F	295.00	Built-in attenuator.
	C-567E	Omni	Electret	Zinc Alloy		200	20-20	64	XLR	9		3½	W	235.00	Lavalier; with tie-tac and tie-bar.
	CK-67/3	Omni	Electret		Vocal			55				⅜		130.00	Lavalier.
	C-568EB	Super Card.	Electret	Zinc Alloy	ENG	200	20-20	62	XLR			6	WF	295.00	Short shotgun.

(Continued)

SOUND INSURANCE



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MICROPHONES

MANUFACTURER	Model	Directional Pattern Plus Channels: Stereo = x2, Quad = x4, M-S = M-S	Operating Principle	Case Material	Most Common Use	Actual Impedance, 1 kHz, Ohms; Balanced = B	Operating Range, Hz to kHz	Open-Circuit Sensitivity, 1 kHz, −dB, re: 1 Volt/1 μbar	Mike Connector Type	Cable Length, Feet	Connector Type on Equipment End of Cable	Weight, Ounces	Wind Screen = W, On/Off Switch = S, Switched Low or Proximity Filter = F	Price, $	Notes
AKG (Continued)	C-410	Card.	Electret		Vocal	300	20-20	70.5	XLR	11¾		4⅝		195.00	
	C-522				Stereo ENG									895.00	
	C-562													360.00	
	D-12E	Card.	Dynamic	Zinc Alloy	Bass Drum	290	30-15	73	XLR			17		315.00	
	D-58E	Card. (Lobe)	Dynamic	Nickel/ Brass		240B		83	XLR			1½		105.00	Noise cancelling.
	D-70M	Card.	Dynamic	Plastic	Record	600	50-18	77		15	Phone			60.00	
	D-70ME	Card.	Dynamic	Plastic	Record	620B	50-18	77	XLR			6¾		70.00	
	D-80	Card.	Dynamic	Brass	Record	210	60-15	76	XLR	15	Phone	7¼	S	115.00	
	D-80E	Card.	Dynamic	Brass	Record	210B	60-15	76	XLR			7½	S	120.00	
	D-109	Omni	Dynamic	Brass		240	70-12	79		30	None	5¼		105.00	Lavalier.
	D-112	Card.	Dynamic	Brass	Bass	200B	20-17	75	XLR			13½		185.00	
	D-125E	Card.	Dynamic	Zinc Alloy	Instr.	210	100-18	74	XLR			8		140.00	
	D-130E	Omni	Dynamic	Zinc Alloy	ENG	220	50-13	75	XLR			9		110.00	
	D-130NR	Omni	Dynamic		ENG	220B	50-13	75	XLR			9		125.00	
	D-190E	Card.	Dynamic	Zinc Alloy	General	280	30-15	73	XLR			6½	S	115.00	
	D-190ES	Card.	Dynamic	Zinc Alloy	General	280B		73	XLR			6½	S	130.00	
	D-202E1	Card.	Dynamic	Zinc Alloy/ Plastic	Strings	300	20-20	76	XLR			12	F	350.00	Two-way system.
	D-222EB	Card.	Dynamic	Zinc Alloy/ Plastic	Podium	320	20-16	77	XLR			9	F	290.00	As above.
	D-224E	Card.	Dynamic	Zinc Alloy	Acous. Instr.	260	20-20	78	XLR			10	F	500.00	As above.
	D-310	Card.	Dynamic	Zinc Alloy	Vocal	270	80-18	78	XLR			9		135.00	
	D-310NR	Card.	Dynamic		Vocal	270B	80-18	78	XLR			9		140.00	
	D-310S	Card.	Dynamic	Zinc Alloy	Instr./ Vocal	270B		78	XLR			9	S	150.00	
	D-320B	Hyper Card.	Dynamic	Zinc Alloy	Vocal	290	80-18	77	XLR			12	F	185.00	
	D-321	Hyper Card.	Dynamic	Zinc Alloy	Vocal	300	40-20	77	XLR			11½		175.00	
	D-321S	Hyper Card.	Dynamic	Zinc Alloy	Vocal	300	40-20	77	XLR			11½	S	150.00	
	D-330BT	Hyper Card.	Dynamic	Zinc Alloy	Vocal	370	50-20	78	XLR			12	F	210.00	
	D-330NR	Hyper Card.	Dynamic		Vocal	370B	50-20	78	XLR			12	F	240.00	
	D-510B	Omni	Dynamic	Nickel/ Brass	Vocal	230B		79	None	3¾	None	11½		120.00	
	D-541	Card.	Dynamic	Plastic	Vocal	720B	120-16	73	None	3¾	None	12½		95.00	
	D-558B	Card. (Lobe)	Dynamic	Nickel/ Brass	Vocal	200B	70-15	83	None	3¾	None	11½		135.00	Noise cancelling.
	D-590	Card.	Dynamic	Nickel/ Brass	Vocal	230B	150-17	78	None	3¾	None	10		145.00	
	D-900E	Super Card.	Dynamic	Nickel/ Brass	ENG	240B	60-12	70	XLR			18	F	350.00	Long shotgun.
	D-1200E	Card.	Dynamic	Zinc Alloy	General	200	25-17	73	XLR			8½	F	180.00	
	CK-67WL	Omni	Electret	Zinc Alloy				64						160.00	Lavalier; with tie-tac and tie-bar.
ASTATIC	BL-94	Card.	Dynamic	Zinc	Vocal	250B	40-16	75				9½	WS	127.00	Switch lock.
	BL-84	Card.	Electret	Zinc	Vocal	280B	40-20	72				6½	WS	145.00	As above.
	BL-74	Card.	Dynamic	Zinc	Vocal	250B	50-16	74				9½	WS	106.00	As above.
	BL-64	Card.	Dynamic	Zinc	Instr.	250B	40-15	74				9	WS	96.00	As above.
	BL-54	Omni	Dynamic	Zinc	Instr.	250B	50-15	82				7½	WS	94.00	As above.
	BL-34	Card.	Dynamic	Zinc	Vocal	500B	60-14	78				8¾	WS	49.95	As above.
	BL-24	Omni	Dynamic	Zinc	Instr.	200B	50-16	82	Attached	30	None	5½		72.00	Lavalier.
	BL-4	Card.	Dynamic	Zinc	Vocal	500B	60-14	78				9½	WS	59.95	Switch lock.
	BL-JT30P	Omni	Crystal	Zinc	Instr.	Hi	30-10	49				8½		50.00	Harmonica mike.
AUDIO-TECHNICA	AT9000	Omni	Electret	Alum.	Vocal	1.5k	60-10	63†	Attached	10	Mini	1.7	S	15.95	†0 dB = 1 mW per 10 dynes/cm^2.
	AT9100	Uni	Dynamic	Plastic	Vocal	600	60-15	63†	Attached	10	Mini	6.7	S	26.95	Phone adaptor.
	AT9200	Uni	Electret	Plastic	Music	1.5k	60-17	48†	Attached	10	Mini	7.1	S	36.95	As above.
	AT9250	Uni	Dynamic	Plastic	Vocal	600	40-10	60†	Attached	13	Mini	7	S	33.95	As above.
	AT9300	Uni/Omni	Electret	Alum.	Video	1k	60-17	61†	Attached	6	Mini	2.8	WS	89.95	As above; convertible shotgun.
	AT9400	Uni x2	Electret	Plastic	Music	1.5k	60-17	53†	Attached	10	Mini	7.1	S	54.95	One-point stereo; phone adaptor.
	AT9500	Omni	Electret	Alum.	Vocal	2k	50-16	53†	Attached	10	Mini	0.2	S	33.95	Lavalier; phone adaptor.
	AT9650	Uni	Dynamic	Plastic	Vocal	250	60-17	58†	A3M	16.3	Mini	8	S	49.95	Phone adaptor.
	AT9800	Uni	Dynamic	Alum.	Music	250	50-18	58†	A3M	16	Mini	10	SF	99.95	As above.
	AT9850	Uni	Dynamic		Vocal	600	60-16	65†	Attached	4	Mini	2	W	49.95	Headset mike with earphone.
	AT9900	Uni	Electret	Alum.	Music	600	40-20	56†	A3M	16	Mini	6.5	SF	129.95	Phone adaptor.
AUDIX	DM-7	Card.	Dynamic	Zinc	Vocal	600B	50-15	75	A3F	16	Phone/ XLR	9	WSF	59.00	
	ST-1	Card. x2	Condenser	Alum.	†	600	50-18	64	Mini	3	Mini	4	WSF	129.00	†For stereo VCRs, portables.
	ML-2	Omni	Condenser	Alum.	Vocal	500	50-17	62	A3F	25	XLR	¼	WSF	169.00	Lavalier.
	Genesis-1	Card.	Dynamic	Alum.	Vocal	200	50-18	78		0	XLR	12	WSF	599.00	Space-diversity wireless.
	Genesis-2	Card.	Dynamic	Alum.	Vocal	200	50-18	78		0	XLR	12	WSF	1495.00	True-diversity wireless.
	OM-1	Hyper Card.	Dynamic	Brass	Vocal	200	50-18	78	A3F	25	XLR	12½	WS	249.00	

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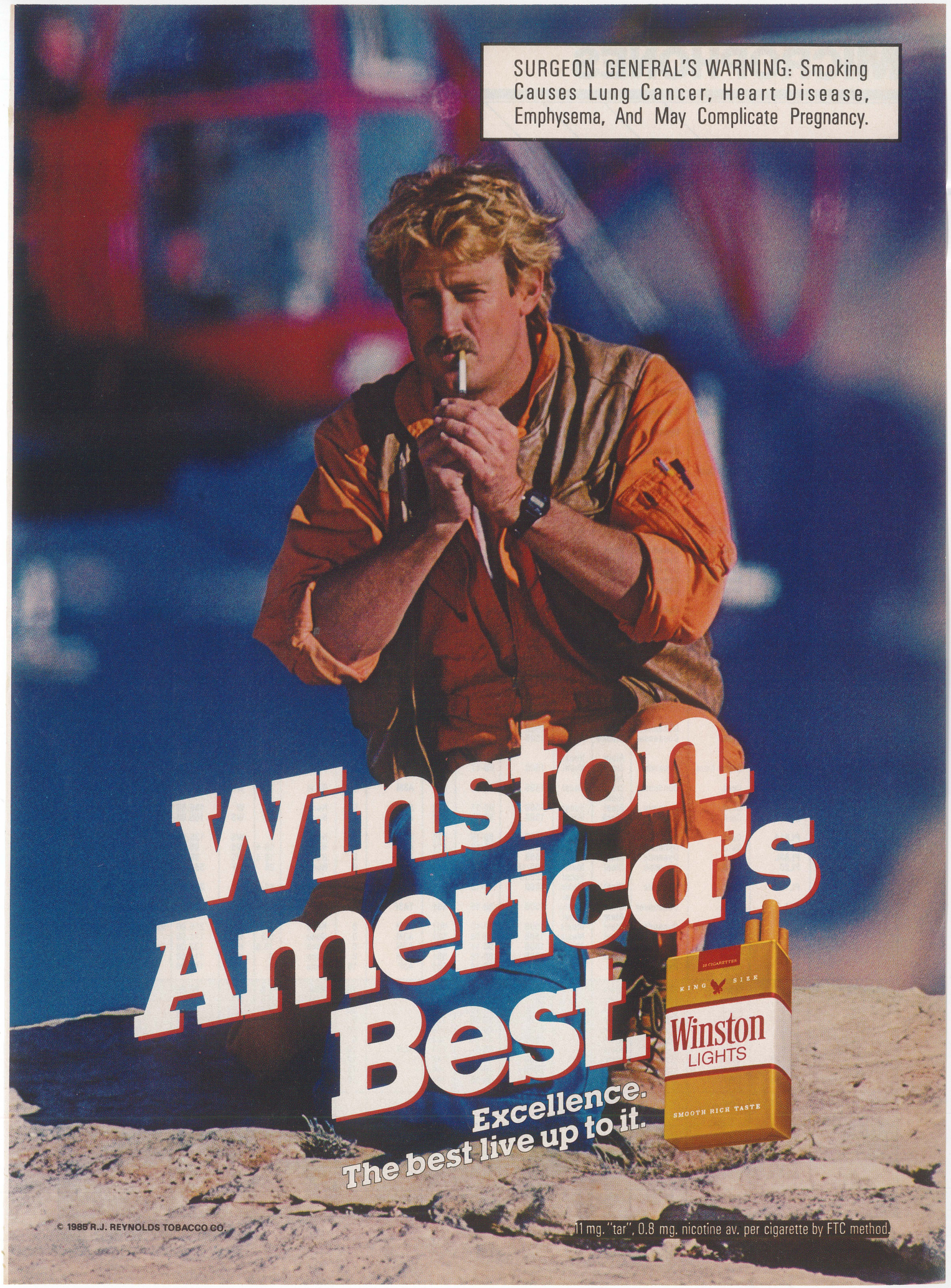
MICROPHONES

MANUFACTURER	Model	Directional Pattern Plus Channels; Stereo = x2, Quad = x4, M-S = M-S	Operating Principle	Case Material	Most Common Use	Actual Impedance, 1 kHz, Ohms; Balanced = B	Operating Range, Hz to kHz	Open-Circuit Sensitivity, 1 kHz, −dB, re: 1 Volt/1 µbar	Mike Connector Type	Cable Length, Feet	Connector Type on Equipment End of Cable	Weight, Ounces	Wind Screen = W, On/Off Switch = S, Switched Low or Proximity Filter = F	Price, $	Notes
AZDEN	DX-8102	Uni	Dynamic	Zinc Alloy	Vocal	200	50-17	76	Cannon	20	Phone	11¾	WSF	230.00	
	DX-580	Uni	Dynamic	Zinc Alloy	Vocal	600	50-15	76	Cannon	20	Phone	8	WSF	70.00	
BEYERDYNAMIC	M380	Figure 8	Dynamic	Brass	Instr.	600B	15-20	†	XLR			9.7		260.00	†5 mV/Pa.
	MC740	Multiple	Condenser	Brass	Studio	150B	40-20	†	XLR			10.3	WF	1000.00	†144 dB with attenuator. Includes EA740 shock mount.
	MC740N (C/5)	Multiple	Condenser	Brass	Studio	150B	40-20	†	5-Pin XLR			10.3	WF	1050.00	†144 dB with attenuator. Includes above shock mount; requires MSG740N(C) power supply.
	MC736PV	Card./Lobe	Condenser	Alum.	Brdcst.	150B	40-20	†	XLR			5.1	WF	750.00	†25 mV/Pa.
	MC737PV	Lobe	Condenser	Alum.	Brdcst.	150B	40-20	†	XLR			6.6	WF	750.00	†25 mV/Pa.
	MCE10.11	Hyper Card.	Electret Condenser	Brass	Brdcst.	700B	40-20			10	XLR	0.4	S	240.00	
	KBM-1				†	600			3-Pin Mini	10	Phone	8.7		240.00	†For electric bass guitar.
	M200	Card.	Dynamic	Alum.	Vocal	600B	50-15	†	XLR			4.9	††	110.00	†2.3 mV/Pa. ††With on/off switch, $15.00 additional.
	M300	Card.	Dynamic	Alum.	Vocal	250B	50-15	†	XLR			8.6	††	140.00	†1.2 mV/Pa.
	M400	Super Card.	Dynamic	Alum.	Vocal	200B	40-16	†	XLR			9.2	††	180.00	†2 mV/Pa.
	M500	Hyper Card.	Ribbon	Alum.	Vocal	200B	40-18	†	XLR			8.9	††	260.00	†1.2 mV/Pa.
	M600	Hyper Card.	Dynamic	Alum.	Vocal	250B	40-16	†	XLR			8.8	††	300.00	†1.4 mV/Pa. Three-position bass filter.
	M69	Hyper Card.	Dynamic	Brass	Instr.	200B	50-16	†	XLR			11.4		180.00	†2.3 mV/Pa.
	M69S	Hyper Card.	Dynamic	Brass	Instr.	200B	50-16	†	XLR			11.4	F	210.00	†2.3 mV/Pa.
	M88	Hyper Card.	Dynamic	Brass	Instr.	200B	30-20	†	XLR			11.4		330.00	†2.3 mV/Pa.
	M201	Hyper Card.	Dynamic	Brass	Instr.	200B	40-18	†	XLR			7.9		220.00	†1.2 mV/Pa.
	M260	Hyper Card.	Ribbon	Brass	Vocal	200B	50-18	†	XLR			10.7	††	260.00	†1.2 mV/Pa.
	M101	Omni	Dynamic	Brass	Instr.	200B	40-20	†	XLR			5.7		220.00	†1.3 mV/Pa.
	M111	Omni	Dynamic	Zinc	Brdcst.	200B	60-15	†		11	XLR	2.7		230.00	†0.7 mV/Pa. Lavalier.
	M130	Figure 8	Double Ribbon	Brass	Record	200B	40-18	†	XLR			5.4		440.00	†1 mV/Pa.
	M422	Super Card.	Dynamic	Brass	P.A.	200B	100-12	†	XLR			2.5		90.00	†1 mV/Pa.
	MPC50	Hemi.	Electret Condenser	Wood	Studio	200B	20-20	33	XLR			17.9	S	650.00	
	MCE5.11	Omni	Electret Condenser	Brass	Brdcst.	200B	20-20	†		10		0.2	S	310.00	†14 mV/Pa. Lavalier; high SPL version, Model MCE 6.11, $310.00; other versions available.
	MC711	Omni	Condenser	Brass	Studio	200B	40-20	†	XLR			4.4	F	500.00	†8 mV/Pa. 12-V power optional.
	MC712	Card.	Condenser	Brass	Studio	200B	40-20	†	XLR			5.3	F	540.00	†8 mV/Pa. Built-in suspension and pop filter; power as above.
	MC713	Omni	Condenser	Brass	Studio	200B	40-20	†	XLR			4.6	F	550.00	†10 mV/Pa. Power as above.
	MC714	Card.	Condenser	Brass	Studio	200B	40-20	†	XLR			5.4	F	590.00	†10 mV/Pa. Power as above.
	MC716	Card./Lobe	Condenser	Brass	Brdcst.	200B	40-20	†	XLR			6.9	F	740.00	†10 mV/Pa. Power as above.
	MC717	Lobe	Condenser	Brass	Brdcst.	200B	40-20	†	XLR			12.4	F	820.00	†10 mV/Pa. Power as above.
	MC718	Figure 8	Condenser	Brass	Studio	200B	40-20	†	XLR			8.1	F	770.00	†10 mV/Pa. Power as above; long shotgun.
	MC734	Card.	Condenser	Brass	Vocal	150B	20-18	†	XLR				F	770.00	†5 mV/Pa. Three-position bass switch; 12-dB attenuator; high SPL version, Model MC734PA, $790.00.
	MC736	Card./Lobe	Condenser	Brass	Brdcst.	150B	40-20	†	XLR			8.6		750.00	†30 mV/Pa. Short shotgun; bass roll-off and 10-dB attenuator.
	MC737	Lobe	Condenser	Brass	Brdcst.	150B	40-20	†	XLR			15.7		830.00	†30 mV/Pa. As above.
	M1-K	Omni	Dynamic	Plastic	Home	200	40-15	†		6	†††	3.2		45.00	†1.5 mV/Pa. †††Phone, version with mini plug available.
	M2-K	Card.	Dynamic	Plastic	Home	600	50-16	†		6	†††	2.9		60.00	†2.5 mV/Pa.
	M160	Hyper Card.	Double Ribbon	Brass	Record	200B	50-18	†	A3F			5.5		400.00	†1.2 mV/Pa.
CROWN INTERNATIONAL	PZM-30R	Hemi.	Electret Condenser	Alum.	Studio	240B	20-15	65	Swcft. A3M			6.5	W	329.00	Pressure Zone Mike.
	PZM-30FS	Hemi.	Electret Condenser	Alum.	Studio	240B	20-15	67	Swcft. A3M			6.5	W	329.00	As above.
	PZM-6R	Hemi.	Electret Condenser	Alum.	Conf.	240B	20-15	65			Swcft. A3M	5	W	329.00	As above.
	PZM-6FS	Hemi.	Electret Condenser	Alum.	Orch.	240B	20-15	67			Swcft. A3M	5	W	329.00	As above.
	PZM-20RMG	Hemi.	Electret Condenser	Alum.	Conf.	150B	20-15	65	Swcft. A3M			6.5		299.00	As above.
	PZM-180	Hemi.	Electret Condenser	Nylon	General	150B	50-18	70	Swcft. A3M			2	W	169.00	As above.
	Sound Grabber	Hemi.	Electret Condenser	Nylon	General	1.6k	50-15	55			Mini	2	W	99.00	As above.
	GLM-100	Omni	Electret Condenser	PVC	Close Instr.	240B	20-20	73			Swcft. A3M	2.8	W	189.00	Lavalier.
	GLM-100/E	Omni	Electret Condenser	PVC		3.5k	20-20	62			None	1		93.00	Wireless, miniature.

(Continued)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11 mg. "tar", 0.8 mg. nicotine av. per cigarette by FTC method.

MICROPHONES

MANUFACTURER	Model	Directional Pattern Plus Channels: Stereo = X2, Quad = X4, M-S = M-S	Operating Principle	Case Material	Most Common Use	Actual Impedance, 1 kHz, Ohms; Balanced = B	Operating Range, Hz to kHz	Open-Circuit Sensitivity, 1 kHz, −dB, re: 1 Volt/1 μbar	Mike Connector Type	Cable Length, Feet	Connector Type on Equipment End of Cable	Weight, Ounces	Wind Screen = W, On/Off Switch = S, Switched Low or Proximity Filter = F	Price, $	Notes
CROWN INTERNATIONAL (Continued)	GLM-200	Hyper Card.	Electret Condenser	PVC	Close Instr.	100B	60-20	68		8	Swcft. A3M	3.7	W	219.00	Miniature.
	GLM-200/E	Hyper Card.	Electret Condenser	PVC		3.5k	60-20	62		8	None	1	W	99.00	As above; wireless.
	PCC-160	Half Super Card.	Electret Condenser	Steel	†	150B	50-18	53	Swcft. TA3M	15	Swcft. A3M	11.5	W	249.00	†Stage floor/lectern. Boundary mike.
	PZM-3LV	Hemi.	Electret Condenser	Plastic		150B	20-15	70		15	Swcft. TA4F	0.5		239.00	Lavalier.
	PZM-3LVR	Hemi.	Electret Condenser	Plastic		150B	20-15	70		10	Swcft. TA4F	0.5		359.00	As above; redundant.
	PZM-2.5	Uni	Electret Condenser	Alum.	†	150B	400-12	64		15	Swcft. A3M	61		369.00	†Stage floor/lectern. Pressure Zone Mike.
ELECTRO-VOICE	N/D 757	Super Card.	Dynamic	Steel& Alum.	Vocal	150B	25-22	50†	A3M			7.7	WF	297.00	†0 dB = 1 mW/Pa.
	N/D 457	Hyper Card.	Dynamic	Steel& Alum.	Vocal	150B	25-21	50†	A3M			7.1	W	222.00	
	N/D 357	Super Card.	Dynamic	Steel& Alum.	Vocal	150B	25-20	53†	A3M			7.1	W	174.00	
	N/D 257	Card.	Dynamic	Steel& Alum.	Vocal	150B	35-19	53†	A3M			7.1	W	126.00	
	N/D 408	Super Card.	Dynamic	Steel& Alum.	Instr.	150B	30-22	50†	A3M			6.7	W	228.00	Positionable yoke mount.
	N/D 308	Card.	Dynamic	Steel& Alum.	Instr.	150B	40-20	53†	A3M			6.7	W	186.00	As above.
	RE20	Card.	Dynamic	Steel	Music/ Vocal	50B/150B/ 250B	40-18	57†	A3M	15	None	26	WF	532.00	Variable-D.
	RE18	Super Card.	Dynamic	Steel	Music/ Vocal	150B	80-15	57†	A3M	15	None	8	W	300.00	As above; integral shock mount.
	RE16	Super Card.	Dynamic	Steel	Vocal	150B	80-15	56†	A3M	15	None	8	W	289.00	Variable-D.
	RE15	Super Card.	Dynamic	Steel	Vocal	150B	80-15	56†	A3M	15	None	6		276.00	As above.
	RE11	Super Card.	Dynamic	Steel	Vocal	150B	90-13	56†	A3M	15	None	6	W	196.00	As above.
	RE10	Super Card.	Dynamic	Steel	Vocal	150B	90-13	56†	A3M	15	None	6		184.00	As above.
	DS35	Card.	Dynamic	Steel	Music/ Vocal	150B	60-17	60†	A3M	15	None	9.2	W	172.00	Integral shock mount.
	RE98	Omni	Condenser	Brass& Alum.	Music/ Vocal	150B	80-15	45†		10	A3M	0.7†	W	218.00	†Capsule only. Battery or phantom powered.
	CO15P	Omni	Condenser	Steel	Music/ Vocal	150B	20-18	49†	A3M	15	None	7.5	W	307.00	
	RE50	Omni	Dynamic	Alum.	Vocal	150B	80-13	55†	A3M	15	None	9.5	W	161.00	Integral shock mount.
	RE55	Omni	Dynamic	Steel	Music/ Vocal	150B	40-20	57†	A3M	15	None	8.5	W	267.00	
	DO54	Omni	Dynamic	Steel	Music/ Vocal	150B	50-18	58†	A3M	15	None	6.5	W	160.00	
	DO56	Omni	Dynamic	Steel& Alum.	Music/ Vocal	150B	80-18	61†	A3M	15	None	6.5	W	134.00	As above; with longer handle, Model DO56L, $152.00.
	635A	Omni	Dynamic	Steel	Vocal	150B	80-13	55†	A3M	15	None	6	W	106.00	
	CO90	Omni	Condenser	Brass& Alum.	Music/ Vocal	150B	40-15	57†	Threaded	6	None	0.7	W	155.00	Lavalier; battery powered.
	PL80	Super Card.	Dynamic	Zinc& Alum.	Vocal	150B	60-17	56†	A3M	0	None	12.3	W	219.00	
	PL78	Card.	Condenser	Zinc& Alum.	Vocal	150B	50-18	49†	A3M	0	None	10.2	WS	203.00	Battery or phantom powered.
	PL95A	Card.	Dynamic	Steel	Vocal	150B	60-17	60†	A3M	0	None	9.2	W	186.00	Internal shock mount.
	BK-1	Card.	Condenser	Zinc& Alum.	Vocal	150B	50-18	50†	A3M	0	None	12	WS	160.00	Battery or phantom powered.
	PL91A	Card.	Dynamic	Zinc	Vocal	150B	60-15	59†	A3M	0	None	8	WS	135.00	
	PL88H	Card.	Dynamic	Zinc	Vocal	25k,B	60-13	57†	A3M	0	None	10.4	WS	95.00	
	PL88L	Card.	Dynamic	Zinc	Vocal	150B	60-13	58†	A3M	0	None	10.4	WS	95.00	
	PL20	Card.	Dynamic	Steel	Music/ Vocal	50B/150B/ 1250B	45-18	57†	A3M	0	None	26	WF	584.00	Variable-D.
	PL10	Card.	Dynamic	Steel	Music/ Vocal	150B	75-15	56†	A3F	0	None	11	W	354.00	As above.
	PL4	Omni	Condenser	Brass& Alum.	Music/ Vocal	150B	80-15	45†	TA3F	8	A3M	0.8	WS	290.00	Miniature lavalier.
	PL11	Super Card.	Dynamic	Steel	Music	150B	90-13	56†	A3M	0	None	6	W	215.00	Variable-D.
	PL9	Omni	Dynamic	Steel	Music	150B	50-18	58†	A3M	0	None	6.5	W	174.00	
	PL6	Super Card.	Dynamic	Zinc	Music	150B	90-13	56†	A3M	0	None	10.5	W	132.00	As above.
	PL5	Omni	Dynamic	Steel	Music	150B	80-13	55†	A3M	0	None	6	W	119.00	
	681	Card.	Dynamic	Zinc	Vocal	150B/Hi-Z	60-14	60†	A3F	15	None	8	WS	143.00	
MARANTZ	EC-1	Omni	Electret	Alum.		2k	60-13	156		10	Mini	3.5		24.00	
	EC-15	Omni	Electret	Alum.		2k	60-13	156		10	Mini	3.5	S	30.00	
	EC-3	Card.	Electret	Alum.		1.5k	50-15	156		10	Mini	8.8		36.00	
	EC-35	Card.	Electret	Alum.		1.5k	50-15	156		6	Mini	8.8	S	40.00	
	EC-5	Card.	Electret	Alum.		2.2k	40-15	149		10	Mini	4.1		50.00	
	EC-7	Card.	Electret	Alum.		250B	40-16	123		6	Phone	10.3		76.00	
	EC-9P	Card.	Electret	Alum.		250B	30-17	151	XLR	10		13.8		130.00	
	EC-12B	Omni	Electret	Alum.		250B	100-15	143		10	Mini	2.3		72.00	
	EC-15P	Omni	Electret	Alum.		250B	70-16	144		15	XLR	1		100.00	
	EC-33S	Card. x2	Electret	Alum.		1k	50-15	146		10	Mini	6.2		70.00	
NADY SYSTEMS	501 HT/LT	Card.		Plastic	Vocal/ Speech								W	900.00	Wireless.
NAKAMICHI	CM-300	Card./Omni	Electret Condenser	Alum.		200	30-18	76	XLR	16½	Phone		WSF	210.00	
	CM-100	Card./Omni	Electret Condenser	Alum.		200	30-18	76	XLR	16½	Phone		WSF	135.00	
	DM-500	Card.	Dynamic	Alum.		200	50-15	73	XLR	16½	Phone		W	130.00	

MICROPHONES

MANUFACTURER	Model	Directional Pattern Plus Channels; Stereo = X2, Quad = X4, M-S = M-S	Operating Principle	Case Material	Most Common Use	Actual Impedance, 1 kHz, Ohms; Balanced = B	Operating Range, Hz to kHz	Open-Circuit Sensitivity, 1 kHz, −dB, re: 1 Volt/1 µbar	Mike Connector Type	Cable Length, Feet	Connector Type on Equipment End of Cable	Weight, Ounces	Wind Screen = W, On/Off Switch = S, Switched Low or Proximity Filter = F	Price, $	Notes
NEUMANN	KM 84	Card.	Condenser	Brass	Studio	200B	40-20	†	A3M	0		2.9	W	398.00	†10 mV/Pa. Interchangeable capsules.
	U 89	5-Pattern	Condenser	Brass	Studio	150B	40-18	†	A3M	25	A3M	14.3	WF	1235.00	†8 mV/Pa.
	TLM 170	5-Pattern	Condenser	Brass	Studio	100B	40-18	†	A3M	25	A3M	22.3	WF	1250.00	†8 mV/Pa. Transformerless.
	U 87A	3-Pattern	Condenser	Brass	Vocal	200B	40-16	†	A3M	25	A3M	17.9	WF	1300.00	†28 mV/Pa.
	USM 69	M-S/X-Y	Condenser	Brass	Orch.	150B	40-16	†	11-Pin Tuchel	33	(2)A3M	18.2		2770.00	†10 mV/Pa.
	KU 81	Binaural	Condenser	Rubber	††	150B	40-16	†	(2)A3M	25	(2)A3M	†††		2890.00	†10 mV/Pa. ††Binaural. †††6 pounds total for mike and "Fritz II" dummy head.
	KM 83	Omni	Condenser	Brass	Orch.	200B	40-20	†	A3M	0		2.9	W	398.00	†7 mV/Pa. Interchangeable capsules.
PIONEER	DM-61		Dynamic		Vocal	600	80-12	75	Cannon	16.4	Phone	8.6	S	129.95	
	DM-51		Dynamic		Vocal	600	80-14	72	Cannon	16.4	Phone	5.4	S	99.95	
	DM-21		Dynamic		Vocal	500	100-15	75		16.4	Phone	5.6	S	29.95	
RECOTON	DM100	Card.	Dynamic	Plastic	General	500				3	Mini		S		
	DM130	Card.	Dynamic	Plastic	General	200				5	Mini		S		
	DM133	Card.	Dynamic	Plastic	General	200				3	Mini		S		
	DM150	Card.	Dynamic	Plastic	General	500				3	Mini		S		
	MM100	Card.	Dynamic	Plastic	Voice	50k				5	Phone	2.5	S		
	MM330A	Card.	Dynamic	Alum.	Music/Vocal	500/50k	80-15	72		10	Phone		S		With mini adaptor.
	MM440A	Omni	Electret	Plastic	Music/Vocal	600/50k	80-18	65		10	Phone	3.4	S		As above.
	MM600	Card.	Electret	Alum.	P.A.	200B	50-13	68		9	Phone		WS		
	MM620	Card.	Electret	Alum.	Music/Vocal	200B	30-16	68		18	Phone		WS		
	MM660A	Card. x2	Electret	Alum.	Music/Vocal	600	50-18	68		10	Phone		S		As above.
	MM760	Omni	Electret	Alum.	Voice		30-16	65		15	Phone				
	MM770	Card. x2	Electret	Alum.	Voice	600	48-18	70		10	Mini	3	WS		
SCHOEPS	CMC 52SU	Omni	Condenser	Nickel	Orch.	35	20-20		XLR-3			3	WF†	640.00	†Optional.
	CMC 54U	Card.	Condenser	Nickel	Vocal	35	40-20		XLR-3			3	WF†	640.00	
	CMC 541U	Hyper Card.	Condenser	Nickel	Film	35	40-20		XLR-3			3	WF†	730.00	
	CMC 56U	Omni/Card./Bi-D	Condenser	Nickel	General	35	40-16		XLR-3			3	WF†	985.00	
	CMC 58U	Bi-D	Condenser	Nickel	Blumln.	35	40-16		XLR-3			3	WF†	780.00	
	BLM 53U	Hemi.	Condenser	Alum.	Ambien.	35	20-18		XLR-3			22½	F†	790.00	
	CMTS 501U	Card./Omni/Bi-D x2	Condenser	Nickel	General	35B	40-16		XLR-5			11¼	W†	2075.00	
	MSTC 54U	Card. x2	Condenser	Nickel	ORTF	40B	40-20		XLR-5			8	W†	1315.00	
	CMH 541CU	Hyper Card.	Condenser	Nickel	Vocal	35	80-20		XLR-3			6¼	W†	835.00	
SENNHEISER	MKH 816	Beam	Condenser	Metal		10	50-20	115	XLR			14		954.00	
	MKH 416	Club	Condenser	Metal		10	40-20	121	XLR			6		723.00	
	ME 20	Omni	Electret Condenser	Metal		200	50-15	143	XLR			5.6		92.00	Requires K3U power supply.
	ME 40	Card.	Electret Condenser	Metal		200	50-15	143	XLR			5.6			As above.
	ME 80	Club	Electret Condenser	Metal		200	50-15	139	XLR			6.8		201.00	As above.
	MKE 2-3	Omni	Electret Condenser	Metal		4.7k	40-20	144	Special	3		0.9		218.00	Tie clip.
	MKE 2002	Stereo†	Electret Condenser	Metal		1.5k	40-20	141	Special	10		2		525.00	†Double mike for binaural.
	MD 200	Omni	Pressure	PVC	General	600	60-13		Phone			3.7		33.00	
	MD 400	Card.	Pressure	PVC	Record	600	60-13		Phone			3.7		41.00	
	MD 402U	Super Card.	Dynamic	Metal	Record	200B	80-12.5	151	XLR	15		5.4		85.00	
	MD 402K	Super Card.	Dynamic	Metal	Record	200	80-12.5	151	Phone	10		6.7		80.00	
	MD 421	Card.	Dynamic	ABS		200	30-17	146	3-Pin XLR			18		332.00	
	MD 431	Hyper Card.	Dynamic	ABS	Vocal	200	70-16	146	XLR					355.00	
	MD 441	Super Card.	Dynamic	Metal	Vocal/Instr.	200	30-20	146	XLR					469.00	
	MD 409-U	Card.	Dynamic	Metal	Vocal/Instr.	200	50-15	146	XLR					249.00	
SHURE	SM80-LC	Omni	Condenser	Steel	Studio/Instr.	150B	20-20	65	3-Pin			8	WF	336.75	
	SM81-LC	Card.	Condenser	Steel	Studio/Instr.	150B	20-20	65	3-Pin			8	WF	336.75	
	SM83	Omni	Condenser	Brass	Speech	150B	80-20	69	Attached	10	Mini 3-Pin	1.5	W	210.00	Lavalier.
	SM87-LC	Super Card.	Condenser	Alum.	Studio/Vocal	150B	50-18	74	3-Pin			6.3		329.00	
	SM90	Omni	Condenser	Die-Cast	†	150B	20-20	66	Mini 3-Pin	25	Mini 3-Pin	9.9		300.00	†Surface mounted.
	SM91	Card.	Condenser	Die-Cast	†	150B	20-20	69	Mini 3-Pin	25	Mini 3-Pin	9.3		300.00	
	SM98	Card.	Condenser	Brass	Instr.	150B	40-20	78	Mini 3-Pin	15	Mini 3-Pin	0.4	W	250.00	
	SM7	Card.	Dynamic	Steel/Alum.	Speech	150B	40-16	79	3-Pin			27	WSF	510.00	
	SM57-LC	Card.	Dynamic	Die-Cast	Instr.	150B	40-15	75.5	3-Pin			10		127.75	
	SM58-LC	Card.	Dynamic	Die-Cast	Vocal	150B	50-15	75.5	3-Pin			22		164.75	
	16L-LC	Card.	Electret Condenser	Alum.	Home Record	600B	50-15	69.5	3-Pin					107.00	

MICROPHONES

MANUFACTURER	Model	Directional Pattern Plus Channels: Stereo = x2, Quad = x4, M-S = M-S	Operating Principle	Case Material	Most Common Use	Actual Impedance, 1 kHz, Ohms; Balanced = B	Operating Range, Hz to kHz	Open-Circuit Sensitivity, 1 kHz, −dB, re: 1 Volt/1 μBar	Mike Connector Type	Cable Length, Feet	Connector Type on Equipment End of Cable	Weight, Ounces	Wind Screen = W, On/Off Switch = S, Switched Low or Proximity Filter = F	Price, $	Notes
SIGNET	RK 101	Card.	Dynamic	ABS Plastic	Music/ Vocal	600	50-14.5	70	Attached	16½	Phone	8	WS	60.00	
	RK 201	Card.	Electret Condenser	Alum.	Music/ Vocal	600	45-17.5	64	Attached	16½	Phone	6½	WS	100.00	
SONOTRIM	STR-PPS	Omni	Electret	Plastic	Vocal	250B	50-18		None	9	XLR-3M	3	W	250.00	Lavalier.
SONY	ECM-150T	Omni	Electret	Alum.	Voice	Lo	50-15	75	Attached	15	Mini/ Phone	0.2	W	69.95	Tie-tac.
	ECM-220T	Card.	Electret	Alum.	Instr.	Lo	50-14	75	Attached	15	Mini/ Phone	8.3	S	49.95	
	F-V200	Card.	Dynamic	Alum.	Vocal	Lo	70-15	80	Cannon	15	None	9	WF	150.00	
	F-V6ET	Omni	Dynamic	Alum.	Music	Lo	100-12	75	Attached	15	Mini/ Phone	5	F	54.95	Variable echo.
	ECM-939LT	M-S x2	Electret	Alum.	Music	Lo	70-15	75	Attached	15	Mini/ Phone	2.6	WS	115.00	
	ECM-929LT	M-S x2	Electret	Alum.	Music	Lo	70-15	75	Attached	15	Mini/ Phone	3.8	WSF	85.00	Directivity selector.
SOUND-CRAFTSMEN	SAM-II	Omni	Electret Condenser	Alum.	†	600	20-15.5	††		15	Phone	3½		69.00	†Real-time analyzer. ††65 dBm.
STANTON	UD 100	Uni	Dynamic		Deejay	500	60-15	74	Phone	13	Phone		WSF	69.95	
TEAC	MC 10	Card.	Dynamic	Plastic	General	500			None	12	Phone		W	22.99	
	ME 15	Omni	Electret	Metal	General	500			None	15	Phone		WS	34.99	
	ME 220 D	Card.	Dynamic	Metal	General	500/50k				15	XLR		WS	37.99	
	ME 330 E	Card. x2	Electret	Metal	General	600			None	15	Phone		WS	59.99	
	ME 700 D	Card.	Dynamic	Metal	General	250			XLR	25	XLR		WS	99.99	
	ME 900 E	Omni	Electret	Metal		600			None	15	Phone			33.99	Lavalier; with tie clip.
TECHNICS	RP-V340	Card.	Dynamic	Alum.	Vocal/ Music		100-10					9	W	26.00	With adaptor.
	RP-V370	Card.	Dynamic	Alum.	Music/ General		40-12					12	W	40.00	As above.
	RP-3215E	Card. x2	Electret Condenser	Alum.	Music		50-10						W	60.00	
	RP-3800E		Electret Condenser	Alum.	Room EQ									78.00	For use with SH-8055K EQ.
	RP-3545E	Card.	Electret Condenser	Alum.	Music		40-14					11	W	70.00	

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Koss' infrared technology makes it possible. The Kordless transmitter plugs into virtually any amplifier or receiver with the same ease as conventional stereophones.

The sleek, lightweight Kordless phones adjust to fit anyone comfortably and feature a volume control, stereo/mono switch and a 9-volt battery power source that provides about 50 hours of use.

And the sound is pure Koss. The closed-cushion design provides a full 20-20KHz frequency response with a signal-to-noise ratio of 65db at less than 1% distortion. With enough signal to let the listener move around a large (250 sq. ft.) room.

To fully appreciate Koss' latest invention, stop by a Kordless dealer for a truly moving experience. And that's not just some line you're being handed, either.

KOSS®

KORDLESS™ STEREOPHONES

Koss Stereophones, 4129 North Port Washington Road, Milwaukee, WI 53212. In Canada: Koss Limited, 4112 South Service Road, Burlington, Ontario L7L4X5. Koss-Europe: CH-6855, Stabio-Switzerland, ©1986 Koss Corporation.

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Some companies make their headphones digital-ready by designing new stickers.

Koss designed new stereophones.

There's an easy way and a hard way to create digital-ready stereophones.

The easy way is just to design a new label for your old phones and hope nobody notices.

The hard way is to do what Koss did with their new line of SST stereophones. They started by inventing a new element specifically designed to faithfully reproduce the wider dynamic range of today's recordings. Then they incorporated this Super Sonic Technology into four of the sleekest, most comfortable phones ever designed.

Naturally, the Koss SSTs have digital-ready stickers just like those other headphones.

But one listen will convince you that the Koss stickers mean something.

KOSS® SST
SUPER SONIC TECHNOLOGY™

Koss Stereophones, 4129 North Port Washington Road, Milwaukee, WI 53212. Koss Limited, 4112 South Service Road, Burlington, Ontario L7L4X5. Koss-Europe: CH-6855, Stabio-Switzerland. © 1986 Koss Corporation.

HEADPHONES

MANUFACTURER	Model	Operating Principle	Frequency Range, Hz to kHz		Impedance, Ohms	Sensitivity, dB SPL for 1 mW Input	Maximum Input, mV	THD at 95 dB SPL, %	Cord Length, Feet	Cord Style: Flat=F, Coiled=C	Plug Type: 3.5-mm Mini=M, ¼" Phone=P, Adaptor Incl.=A	Individual Volume Controls?	Circumaural=C, Supra-Aural=S, Open-Air Design=O	Headband: None (Fits In Ear)=N, Adjustable=A, Folding=F	Cover Material on Ear Cup	Weight, Ounces	Price, $	Notes
AIWA	HP-X10		5-25	40													75.00	
	HP-A505		15-24	32													35.00	
	HP-V11		15-22	15													40.00	
	HP-V30		18-22	17													30.00	
	HP-V9		15-40	16													45.00	
	HP-V17		20-30	32													27.00	
	VP-V1		18-22	17												0.18	23.00	
	HP-A101	Dynamic	15-22	32												1.7	25.00	
AKG	K-45	Dynamic	30-18	200	94	6.3V	0.9	8	F	P	No	O	A	Plastic	4.5	45.00		
	K-130	Dynamic	20-20	200	94	9V	0.7	9	F	P	No	S	A	Plastic	4.4	55.00		
	K-135	Dynamic	25-18	150	107	8.9V	0.7	10	F	P	No	S	A	Plastic	5.6	65.00		
	K-141	Dynamic	20-20	600	107	11V	0.5	10	F	P	No	S	A	Metal & Plastic	6.9	75.00		
	K-145	ES/Dyn.	25-24	200	107	8.9V	0.5	10	F	P	No	S	A	Plastic	6	85.00		
	K-240M	Dynamic	20-20	600	112	11V	0.3	8⅜	F	P	No	C	A	Metal & Plastic	8.5	99.00		
	K-240DF	Dynamic	20-20	600	112	11V	0.3	8⅜	F	P	No	C	A	Metal & Plastic	8.5	125.00		
	K-340	ES/Dyn.	15-25	400	104	10V	0.1	10	C	P	No	C	A	Metal & Plastic	13.5	195.00		
AUDIO-TECHNICA	Point 17	Dynamic	35-20	4-16	99	2V	0.6†	4	F	M/A	No	S	A	Foam	1	29.95	†At 100 dB.	
	ATH-18	Dynamic	20-20	32	91	1.8V	0.3†	10	C	P	No	C	A	Vinyl	3.5	54.95		
	ATH-20	Dynamic	25-20	4-16	98	1.8V	0.3†	8	F	M/A	No	S	A	Vinyl	3.3	64.95	Variable damping.	
	ATH-V7	Dynamic	20-20	4-16	96	1.8V	0.3†	9	F/C	P	No	C	A	Vinyl	6.5	84.95		
	ATH-CD7	Dynamic	20-20	35	96	5V	0.3	8	F/C	P	No	C	A	Vinyl	9.5	109.95		
AZDEN	DSR-50	Dynamic	15-26	300	101		0.3	8¼	F	P	No	S	A	Vinyl	6	70.00		
	DSR-38	Dynamic	16-24	40	103	100	0.3	5	F	M/A	No	O	A	Foam	2¼	100.00		
	DSR-12	Dynamic	20-22	200	105	100	0.5	8¼	F	P	No	S	A	Cloth	4¼	70.00		
	DSR-68	Dynamic	20-22	32	95	100	0.3	8¼	F	P	No	O	A	Foam	1½	60.00		
	DSR-69	Dynamic	40-20	32	92	100	0.5	3½	F	M	No	O	A	Foam	1¼	15.00		
	DSR-64	Dynamic	30-20	32	100	100	0.7	3½	F	M	No	O	A/F	Foam	¼	25.00		
	DSR-30	Dynamic	30-20	32	96	100	0.5	7¼	F	M	No	O	F	Foam	¾	35.00		
	DSR-28	Dynamic	30-20	32	102	100	0.7	4	F	M/A	No		N	Plastic	¼	30.00		
BANG & OLUFSEN	Form 1	Dynamic	20-20	35	94		1†	10	C	M/P/A	No	O	A	Foam	6	100.00	†Per DIN 45-500.	
	Form 2	Dynamic	40-20	30	94		1†	10	C	M/P/A	No	O	A	Foam	2½	50.00		
BEYERDYNAMIC	DT990	Dynamic	5-35	600	96	7.75V		6	F	P	No	C	A	Cloth	8	160.00		
	DT880 Monitor EF	Dynamic	5-30	600	94	7.75V		6	F	P	No	C	A	Cloth	7	265.00	Includes plug-in filter.	
	DT320	Dynamic	20-20	600	88	7.75V		6	F	M/P	No	S	A	Vinyl	3.8	45.00		
	DT340TV	Dynamic	20-20	50	88	2.24V		23	F	M	Yes	S	A	Vinyl	3.8	60.00		
	DT220	Dynamic	20-20	400	102	6.4V		6	C	P	No	C	A	Vinyl	9.3	80.00		
	DT330MKII	Dynamic	15-18	40	85	2V		6	F	P	No	S	A	Vinyl	6.8	60.00		
	DT550	Dynamic	10-22	600	95	7.75V		6	C	P	No	S	A	Vinyl	7.1	90.00		
	DT660MKII	Dynamic	15-25	600	93	7.75V		6	C	P	No	C	A	Vinyl	8.9	120.00		
	DT880	Dynamic	5-25	600	94	7.75V		6	C	P	No	S	A	Vinyl	7	130.00		
	DT880 Monitor	Dynamic	5-35	600	94	7.75V		6	C	P	No	S	A	Cloth	7	185.00		
	DT880 Studio	Dynamic	5-35	600	94	7.75V		6	C	P	No	S	A	Vinyl	7	165.00		
	DT301	Dynamic	30-12	600	97	12V		12	F	M	No	S	††		0.8	22.00	††Has ear clip.	
	DT505	Dynamic	20-12	200†	115	7.75V		8	F		No		††		0.3	24.00	†Other impedance available.	
	DT48A	Dynamic	16-20	5	112	1V		8	F		No	S	A	Rubber	14.3	260.00	For audiometric use.	
	DT48	Dynamic	16-20	200†	105	4.4V		8	F	P	No	C	A	Vinyl	14.3	245.00	Coiled cord optional.	
	DT96A	Dynamic	30-17	400†	94	12V		3	F		No	C	A	Vinyl	4.3	115.00	As above.	
	DT100	Dynamic	30-20	400†	94	20V		3	F	P	No	C	A	Vinyl	12.5	130.00	As above.	
	DT102	Dynamic	30-20	400†	94	20V		3	F	P	No	C	A	Vinyl	8.9	95.00	As above.	

HEADPHONES

MANUFACTURER	Model	Operating Principle	Frequency Range, Hz to kHz		Impedance, Ohms	Sensitivity, dB SPL for 1 mW Input	Maximum Input, mW	THD at 95 dB SPL, %	Cord Length, Feet	Cord Style: Flat = F, Coiled = C	Plug Type: 3.5-mm Mini = M, ¼" Phone = P, Adaptor Incl. = A	Individual Volume Controls?	Circumaural = C, Supra-Aural = S, Open-Air Design = O	Headband: None (Fits in Ear) = N, Adjustable = A, Folding = F	Cover Material on Ear Cup	Weight, Ounces	Price, $	Notes
DENON	AH-D6	Dynamic	15-22	32	98			8	F	M/P	No	O	A/F	Foam	5	89.95	Long-crystal, oxygen-free copper voice-coil.
	AH-D4	Dynamic	15-22	32	96			8	F	M/P	No	O	A/F	Foam	5	69.95	As above.
	AH-D3	Dynamic	17-22	40	100	200		8	F	M/P	No	O	A	Foam	5		As above.
	AH-D1	Dynamic	20-22	40	103	200		8	F	M/P	No	O	A	Foam	5		Oxygen-free copper cable.
KOSS	Pro 4X Plus	Dynamic	10-40	100	100			10	C		No	C	A		8.3	85.00	
	Pro 4AAA Plus	Dynamic	10-22	100	100			10	C		No	C	A		13	70.00	
	K40LC Plus	Dynamic	10-20	100	100			10	C		Yes	C	A		6.7	40.00	
	K6X Plus	Dynamic	10-22	100	100			10	C		No	C	A		6.3	30.00	
	SST 7	Dynamic	15-30	60	100				C		No	C	A		5	69.95	
	SST 6	Dynamic	15-30	60	100				C		No	O	A		4.5	59.95	
	SST 5	Dynamic	20-20	60	100				C		No	C	A		3	39.95	
	SST 4	Dynamic	20-20	35	100				C		No		A		2	29.95	
	Porta Pro	Dynamic	15-20	60	100			5	F		No		F		2.5	49.95	
	KSPII	Dynamic	20-20	35	100			9	F		No		F		2.3	35.00	
	KSPI	Dynamic	20-17	35	100			9	F		No		F		3.5	25.00	
	HVXLC	Dynamic	15-35	100	100			10	C		Yes	O	A		8.4	60.00	
	HV1A	Dynamic	15-30	140	100				C		No		A		9.3	50.00	
	KC/29	Dynamic	18-20	100				8	F	A	No	O	A		3.5	24.00	
	KC/24	Dynamic	20-17	35					F	A	No	O	A		3.5	20.00	
	KC/10	Dynamic	40-12	35					F	A	No	O	A		2.5	10.00	
	FF/300	Dynamic	20-20	35					F	A	No	O	A		3	19.99	
	FF/200	Dynamic	20-20	35					F	A	No	O	A		2.5	15.99	
	FF/100	Dynamic	40-16	35					F	A	No	O	A		2	9.99	
	JCK/200 Kordless	Dynamic	20-20								Yes	C	A			149.95	Cordless.
	KMP/2 Earbuds	Dynamic	20-20	32	102				F		No	O	A			19.99	
	KMP/.8 Earbuds	Dynamic	20-20	32	100				F		No	O	A			14.99	
	KMP/.5 Earbuds	Dynamic	20-20	32	102				F		No	O	N			9.99	
	KMP/1 Earbuds	Dynamic	20-20	32	100				F		No		N			17.00	
MEMOREX	Sonic-Lite SL40	Dynamic	50-16	32	80	50		4		M/A	No		A	Foam	1½	4.99	
	Sonic-Lite SL60	Dynamic	50-18	32	92	100		4		M/A	No		A	Foam	1¾	9.99	
	Sonic-Lite SL90	Dynamic	20-20	32	100	100		4		M/A	No		A	Foam	2	14.99	
	Sonic-Lite SL88	Dynamic	20-20	16	106	30		4		M/A	No		N	Foam	½	14.99	
NADY SYSTEMS	IRH-210		50-15										A	Vinyl		199.95	Infrared wireless; includes transmitter.
NAKAMICHI	SP-7	Dynamic	20-20	45		100		10	F	P	No	O	A	Foam	5.3	80.00	
NUMARK	HM 5000	Dynamic	60-12	8				8	F	P	No	C	A	Plastic	6½		Mono.
	HM 6000A	Dynamic	60-12	8				8	F	M/P	No	C	A	Plastic	7		Includes dynamic mike.
	HM 7000A	Dynamic	60-12	8				8	F	M/P	No	C	A	Plastic	7½		As above.
ONKYO	DP-G4	Dynamic	10-20	32	111				F	P	No	O	A	Foam	5	52.00	
	DP-L2X	Dynamic	15-20	30	110				F	M/A	No	S	A	Foam	1½	44.00	
	DP-L1X	Dynamic	20-20	28	102				F	M/A	Yes	S	A/F	Foam	1¼	40.00	
	DP-S1X	Dynamic	50-20	18	102				F	M/A	No	S	A/F	Wire Mesh	¼	36.00	
PANASONIC	EAH-D8	Dynamic	15-25	45	102	50mW		8.2	F	P/A	No		A	Plastic	3	50.00	
	EAH-S30	Dynamic	20-20	40	98	100mW		4.9	F	P/A	No		A	Plastic	1.4	40.00	
PARASOUND	LSH-1	Dynamic	50-18	32	96	1.2V	0.85	6	F	M/A	No	O	A	Foam	2	29.95	
PICKERING	CD-4	Dynamic	20-20	60	100	100mW	0.5	7½	F	P	No	O	A	Vinyl	3	60.00	
	CD 3+3	Dynamic	20-20	32	105	100mW	0.5	7½		P	Yes	O	A	Vinyl	5.8	60.00	Stereo/mono switch.
	CD-2	Dynamic	20-20	32	112	100mW	0.5	7½		M/P	No	O	A	Vinyl	5	45.00	
	OA-99P	Dynamic	20-20	18	105	50mW	0.5	5		M/P	No	O	A		1.1	22.00	
	OA-7	Dynamic	10-22	100	110	100mW	0.5†	10	F	P	No	O	A	Nylon	6	70.00	†At 110 dB.
	OA-203	Dynamic	10-20	40	105	50mW	0.5†	6	F	M/P	No	O	A	Vinyl	2.5	29.95	†At 105 dB.
	OA-101P	Dynamic	20-18	40	100	50mW	0.5†	5	F	M/P	No	O	A	Foam	2	24.95	†At 100 dB.
	OA-88	Dynamic	20-20	32	98	50mW	0.5†	4	F	M	No	O	A	Foam	0.5	21.95	†At 100 dB.
	OA-66P	Dynamic	20-20	32	92	100mW	0.5†	5	F	M/P	No	O	A	Foam	1.1	20.95	†At 100 dB.
PIONEER	SE-50D	Dynamic	3-50	32	108			10	C	M/A	No	S	A	Plastic	3.2	54.95	
	SE-L90	Dynamic	10-22	40	103			10	F	M/A	No	S	A	Plastic	2.5	79.95	
	SE-L66	Dynamic	16-22	30	110			6.6	F	M/A	Yes	O	F	Resin	0.6	49.95	
	SE-L44	Dynamic	16-22	30	110			6.6	F	M/A	Yes	O	A	Resin	0.6	39.95	
	SE-L22	Dynamic	16-22	30	110			6.6	F	M/A	No	O	A	Resin	0.6	29.95	
	SE-205	Dynamic	20-20	10	103			8.2	F	P	No	C	A	Plastic	15	29.95	
QUASAR	SV401YE		20-20	16	93	100		4	F	P	No	O	A	Foam	1¼	10.95	
	SV406								F		No		A		1½	49.95	
REALISTIC	Nova 55															30.00	
	Nova 37															15.00	

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The DEX-77

The DEX-77 CD/Tuner.

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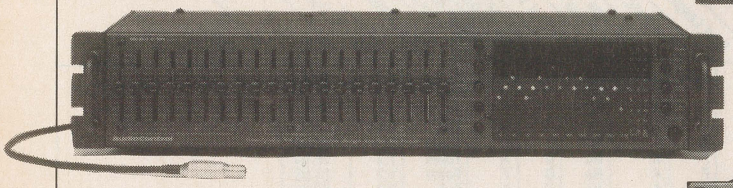
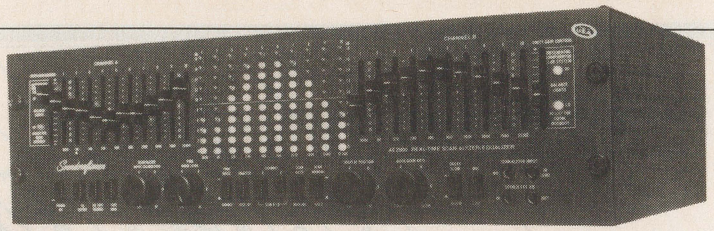
HEADPHONES

MANUFACTURER	Model	Operating Principle	Frequency Range, Hz to kHz		Impedance, Ohms	Sensitivity, dB SPL for 1 mW Input	Maximum Input, mW	THD at 95 dB SPL, %	Cord Length, Feet	Cord Style: Flat = F, Coiled = C	Plug Type: 3.5-mm Mini = M, ¼" Phone = P, Adaptor Incl. = A	Individual Volume Controls?	Circumaural = C, Supra-Aural = S, Open-Air Design = O	Headband: None (Fits in Ear) = N, Adjustable = A, Folding = F	Cover Material on Ear Cup	Weight, Ounces	Price, $	Notes
RECOTON	ST-66	Dynamic	20-25	25	98	400mW		10	F	A	No	O	A	Foam	2.5	25.00	
	ST-77	Dynamic	20-25	25	98	300mW		10	F	A	No	O	A	Foam	1.7	20.00	
	ST-90	Dynamic	20-20	32	96	300mW		7	F	A	No	O	F	Foam	0.8	18.00	
	ST-92	Dynamic	20-20	32	90	100mW		4	F	A	No	O	A	Foam	1.4	13.00	
	ST-93	Dynamic	20-22	32	100	100mW		5	F	A	No	O	F	Foam	1	17.00	
	ST-91	Dynamic	20-25	200	100	300mW		7	F	A	No	O	A	Foam	1.2	28.00	
	ST-94	Dynamic	20-22	32	92	200mW		4	F	A	No	O	F	Foam	1.2	23.00	
	ST-95	Dynamic	20-22	25	100	300mW		7	F	A	No	O	A	Felt	2.2	28.00	
	ST-96	Dynamic	20-20	20	100	300mW		7	F	A	No	O	A	Felt	2.2	30.00	
	ST-97	Dynamic	20-23	35	100	300mW		6	F	A	No	O	A	Foam	2.8		
	ST-98	Dynamic	50-22	32	102	100mW		4	F	M	No	S	N	Foam	0.2	17.00	
	ST-99	Dynamic	20-22	20	100	300mW		5	F	M	No	S	N	Foam	0.7	16.00	
	ST-100	Dynamic	20-20	38	98	300mW		4	F	M	No	S	N	Foam	0.5	23.00	
	ST-101	Dynamic	20-20	32	98	100mW		6	F	A	No	O	F	Foam	1.2	27.00	
	ST-102	Dynamic	50-20	32	109	30mW		4	F	A	No	S	F		0.5	23.00	
	ST-103	Dynamic	30-20	32	98	100mW		6	F	A	No	O	A	Foam	1	18.00	
SENNHEISER	HD44	Dynamic	40-15	17				3	F	P	No	SO	N	Foam	1.2	49.00	
	HD40	Dynamic	22-18	32	90		1.5	10	F	M/A	No	SO	A	Foam	2	45.00	
	HD410-SL	Dynamic	20-18	600	88	15V	1.3	10	F	P	Opt.	SO	A	Foam	3	59.00	
	HD414-SL	Dynamic	16-20	600	102	18V	1	10	F	P	Opt.	SO	A	Foam	2.6	84.00	
	HD420-SL	Dynamic	18-20	600	94	8V	0.6	10	F	P	Opt.	SO	A	Foam	4.6	99.00	
	HD430	Dynamic	16-20	600	94	8V	0.6	10	F	P	No	CO	A	Vinyl	6.8	149.00	
	HD540	Dynamic	16-25	600	94	8V	0.1	10	F		Opt.	CO	A	Vinyl	5.9	169.00	
	HD222	Dynamic	16-20	600	94	8V	0.6	10	F	P	Opt.	C	A	Vinyl	8.8	99.00	
	HD230	Dynamic	10-30	600	94	8V	0.5	10	F		Opt.	C	A	Vinyl	9.2	189.00	
SFI	17	†	10-100		98				F	P	No	S	A		6½	80.00	†Dynapleat.
SIGNET	TK44	Electret Cond.	10-25	4-32	98	1.5V	0.4†	8	F		No	S	A	Plastic	7.9	290.00	†At 110 dB.
	TK22	Dynamic	20-20	4-16	96	5V	0.4†	11.5	F	P	No	S	A	Plastic	7.2	130.00	
	TK21	Dynamic	20-20	4-16	98		0.5†	8.2	F	M/A	No	S	A	Plastic	5	100.00	
	TK20	Dynamic	25-20	4-16	100	1.7V	0.5†	4.9	F	M/A	No	O	A/F	Plastic	2.2	65.00	
	TK11	Dynamic	30-20	4-16	93	1.7V	0.6†	4.9	F	M/A	No	O	A	Plastic	2.6	45.00	
SONY	MDR-CD5	Dynamic	2-22	45	110	500mW		10	F	M/P	No	S	A	Foam	3	100.00	Oxygen-free copper wire.
	MDR-M77	Dynamic	10-25	45	108	500mW		10	F	M/P	No	S	A	Cloth/ Foam	2.5	89.95	As above.
	MDR-M55	Dynamic	16-22	45	106	500mW		10	F	M/P	No	S	A	Cloth/ Foam	2.5	69.95	As above.
	MDR-M33	Dynamic	16-20	45	104	500mW		10	F	M/P	No	S	A	Foam	3	59.95	
STANTON	ST-1	Dynamic	25-20	32	110	100mW	0.5	7.5		M/P	No	O	A	Vinyl	3.2	24.95	
	ST-2	Dynamic	20-20	32	100	100mW	0.5	7.5		M/P	No	O	A	Cloth	5.0	29.95	
	ST-3	Dynamic	20-20	32	112	100mW	0.5	7.5		M/P	No	O	A	Vinyl	5.0	39.95	
	30M/SR	Dynamic	20-20	100		0.25mW		10	C	P	No	O	N	Vinyl	3.8	49.95	
	35M/HB	Dynamic	20-20	100		0.25mW		10	C	P	No	O	A	Vinyl	3.8	55.00	
	Stereowafer 80	Dynamic	10-22	100	110	1mW	0.5†	10	F	P	No		A	Vinyl	5.9	70.00	†At 110 dB.
	Dynaphase 60A/600	Dynamic	10-20	600	110	0.25mW	0.25†	10	F	P	No		A	Vinyl	5.5	70.00	†At 110 dB.
	Microwafer 15V	Dynamic	20-22	32	98	10mW	0.5†	4	F	M/P/A	Yes		F	Foam	1.6	34.95	†At 110 dB; with extra ear pads.
	Microwafer 14	Dynamic	10-20	32	98	1mW	0.5†	5	F	M/P	No	O	F	Foam	1.4	29.95	†At 100 dB.
	Microwafer VI	Dynamic	20-18	40	100	0.05mW	0.5†	5	F	M	No	O	F	Foam	2	24.95	†At 100 dB.
	Microwafer V	Dynamic	20-20	32	100	10mW	0.5†	4	F	M/P	No	O	A	Foam		24.95	†At 100 dB; with extra ear pads.
STAX	SR-34	ES	25-25	8	95		0.02	7	F	A	No	CO	A	Vinyl	8	129.95	
	SR-84	ES	25-25	8	95		0.02	7	F	A	No	CO	A	Vinyl	7.5	199.95	
	SR-5/N	ES	25-25	8	97		0.05	7	F	A	No	CO	A	Vinyl	13.9	249.95	
	SR-Gamma	ES	25-25	8	97		0.05	7	F	A	No	CO	A	Vinyl	7.5	349.95	
	SR-Lambda	ES	8-35	8	102		0.05	7	F	A	No	CO	A	Vinyl	15.1	489.95	
	SR-Sigma	ES	2-35	8	94		0.05	7	F	A	No	CO	A	Vinyl	16.4	599.95	
	SR-Lambda Pro #1	ES	8-35	8	102		0.005	7	F	A	No	CO	A	Vinyl	15.1	599.95	
	SR-Lambda Pro #2	ES	8-35	5k	102		0.005	7	F	A	No	CO	A	Vinyl	15.1	629.95	Portable system.
	SR-Lambda Pro #3	ES	8-35	50k	102		0.005	7	F	A	No	CO	A	Vinyl	15.1	999.95	Includes Class-A amp.
TEAC	HP 202	Dynamic		32					F	M/A	No	C	A	Foam		17.49	
	HP 206	Dynamic		32					F	M/A	Yes	C	A	Foam		21.99	
	HP 308	Dynamic		32					F		No	C	A	Foam		24.49	
	HP 402	Dynamic		32					F	M/A	No	C	A	Foam		34.99	
	HP 302	Dynamic		32					F	M/A	No	C	N	Foam		25.99	
TECHNICS	EAH-T6	Dynamic	20-20	40	98	100		4.5	F	M/A	No	O	A	Foam	1¼	30.00	
	EAH-T10	Dynamic	15-20	32	100	300	0.2	6.6	F	M/A	No	O	A	Foam	2¾	50.00	
YAMAHA	HP-100	Orthodyn.	20-20	150	98	3W	0.3	8	F	P	No	S	A	Plastic	13.7	99.00	
	YHD-1	Orthodyn.	20-20	125	100	1W	0.3	8	F	P/A	No	S	A/F	Plastic	5.9	75.00	
	YHD-2	Orthodyn.	20-20	125	97	700mW	0.3	8	F	P/A	No	S	A/F	Plastic	5.6	55.00	
	YH-3	Orthodyn.	20-20	125	97	1W	0.3	8	F	P	No	S	A	Plastic	5.3	30.00	
	YHL-006	Dynamic	20-20	45	99	100mW	0.5	8	F	P/A	No	O	A/F	Plastic	3.4	50.00	
	YHL-003	Dynamic	20-20	45	103	200mW	0.5	8	F	P/A	No	O	A/F	Plastic	3.7	40.00	

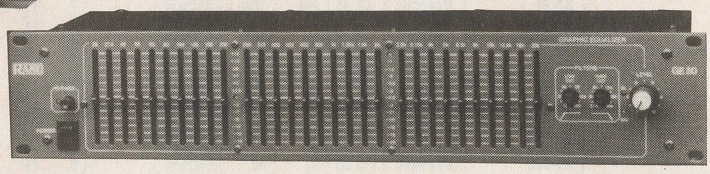
EQUALIZERS



AUDIO CONTROL C-101

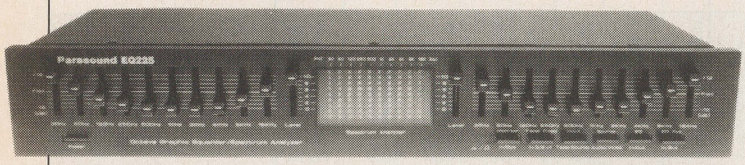


SOUNDCRAFTSMEN AE2000



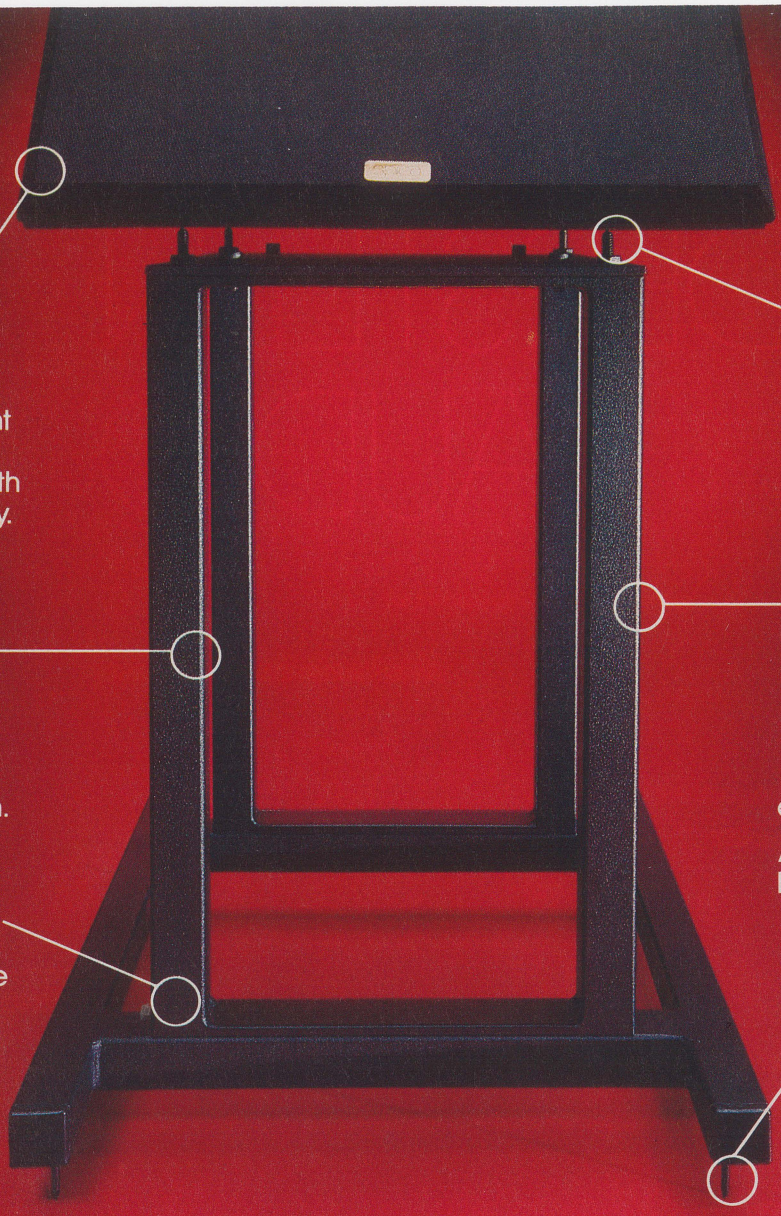
RANE GE 30

PARASOUND EQ225



MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Number of Channels	Number of Bands per Channel	Bandwidth, Octaves	Switched Tape EQ?	Unity Gain Control?	Rated Output, rms V	THD at Rated Output, %	S/N, – dB, at Rated Output, "A" Wtd.	Variable Center Frequencies?	Variable Filter "Q"?	Boost/Cut Range, ± dB	Real-Time or Spectrum Analyzer?	Test Generator? Pink Noise = P, Warble Tone = W	With Calibrated Mike?	Number of Memories	Number of Tape Monitors	Subsonic Filter?	Video Inputs?	Price, $	Notes
ACCUPHASE	G-18	2	33	1/3	No	No	2	0.002	110	No	No	12	No	No	No	0	0	No	No	2800.00	
ADC	SoundShaper 112X	2	10	1	Yes	Yes	5	0.1	95	No	Yes	12					1	No		150.00	
	SS-117EX	2	10	1	Yes	Yes	5	0.1	95	No	Yes	15					2	No		250.00	
	SS-VIII	2	10	1	Yes	Yes	5	0.1	95	No	Yes	15					1	No		280.00	
	SS-412X	2	10	1	Yes	Yes	5	0.1	95	No	Yes	15	Yes	Yes	Yes		2	Yes		430.00	
	SS-425X	2	12	1, 2/3	Yes	Yes	5	0.1	95	No	Yes	12	Yes	Yes	Yes	4	2	Yes		500.00	With remote and auto room/speaker EQ, Model SS-525X, $600.00.
	SS-100SL	2	10	1	Yes	Yes	5	0.1	100	No	Yes	15	Yes	No	No		1	Yes		200.00	
ADVANCED ELECTRODYNAMIC SYSTEMS	X10D	2	1	10	No	No	5	0.01	100	No	No	4	No	No	No	0	0	Yes	No	129.95	Fixed bass-boost filter; four-position high-frequency boost.
AKAI	EA-A7	2	7	1 1/3	Yes	No		0.03	95	No	No	10	Yes	No	No	3	2	No	No	290.00	Computer controlled.
	EA-A2	2	9	1	Yes	No		0.03	95	No	No	12	No	No	No	0	2	No	No	170.00	
	EA-A22	2	9	1	Yes	No		0.09	80	No	No	12	No	No	No	0	1	No	No	170.00	
AUDIO CONTROL	Octave	2	10	1	Yes		7	0.008	118	No	No	12	No				1	Yes		149.00	
	Octave Plus	2	10	1	No		7	0.008	118	No	No	12	Yes	W	Yes		1	Yes		239.00	Infinite-sweep warble generator.
	Richter Scale	2	6	1/2	Yes		7	0.005	120	No	No	12	Yes	W	Yes		1	Yes		349.00	Bridging adaptor.
	Ten	2	10	1	Yes		7	0.005	120	No	No	15	No				1	Yes	Yes	229.00	
	Ten Plus	2	10	1	Yes		7	0.005	120	No	No	15	Yes	W	Yes		1	Yes	Yes	329.00	Stepped warble, 0-dB indicator.
	C-101	2	10	1	Yes		7	0.008	116	No	No	15	Yes	P	Yes		1	Yes		429.00	SPL display, rumble reducer.
AUDIO DESIGN ASSOCIATES	EQ-5	2	5		No	Yes	7	0.05	95	No	No	30	No	No	No			No	No	650.00	
AUDIOSOURCE	EQ-One/II	2	10	1/3	Yes	Yes	6.5	0.027	100	Yes	Yes	12	Yes	Yes	Yes		1	Yes		349.00	
	EQ-Eight	2	10	1/3	Yes	Yes	6.0	0.03	80	Yes	Yes	12	Yes				1	Yes	Yes	159.95	A/V selector.
AZDEN	GX-50	2	10	1	Yes	Yes	6	0.005	90	No	No	12	Yes	Yes	Yes		1	No	No	300.00	
	GX-45	2	10	1	Yes	Yes	6	0.005	90	No	No	12	No	No	No		2	No	No	225.00	Spectrum display.
	GX-36	2	10	1	Yes	Yes	6	0.005	100	No	No	12	No	No	No		2	No	No	125.00	
BIAMP SYSTEMS	EQ-220	2	10	1	No	Yes	9	†	††	No	No	15	No	No	No	0	0	No	No	329.00	†0.005% at +4 dBm. ††110 dB, unweighted. Peak indicators.
	EQ-230	2	15	2/3	Yes	Yes	9	†	††	No	No	12	No	No	No	0	2	No	No	529.00	Ten-segment meter; XLR, phone, RCA, or barrier-strip connections.

(Continued)



All Speakers Move
By controlling speaker movement stereo imagery becomes stable with pin-point accuracy.

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Provide optimum coupling of speaker to stand and reduces wobble or stand movement during play.

Non-Flex Design
Use of stanchion frames provides rigidity for more efficient energy transfer of vibration.

Lead Filling Capacity
Many models can be filled with sand and lead shot to further reduce movement and dampen resonance.

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Over 25 models are available in wood, brass and textured matte black finish.

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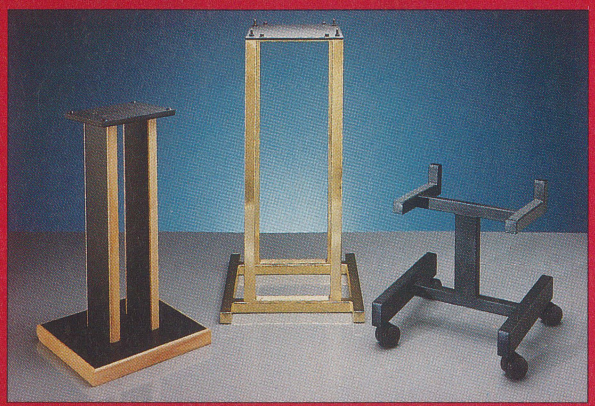
For maximum stability and coupling to any floor surface. Spikes increase pounds per square inch ratio to floor surface for stability.

Improve the sound of any speaker.



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DIMENSIONAL PURITY

Enter No. 86 on Reader Service Card

MANUFACTURER	Model (RI)=Remote Included, (RO)=Remote Optional	Number of Channels	Number of Bands per Channel	Bandwidth, Octaves	Switched Tape EQ?	Unity Gain Control?	Rated Output, rms V	THD at Rated Output, %	S/N, –dB, at Rated Output, "A" Wtd.	Variable Center Frequencies?	Variable Filter "Q"?	Boost/Cut Range, ±dB	Real-Time or Spectrum Analyzer?	Test Generator? Pink Noise=P, Warble Tone=W	With Calibrated Mike?	Number of Memories	Number of Tape Monitors	Subsonic Filter?	Video Inputs?	Price, $	Notes
BIAMP SYSTEMS (Continued)	EQ-290	1	29	1/3	No	Yes	9	†	††	No	No	12	No	No	No	0	0	Yes	No	549.00	As above; adjustable low-pass filter.
	EQ-140	1	4	0.1-5.5	No	Yes	9	†	†††	Yes	Yes	16	No	No	No	0	0	No	No	399.00	†††105 dB, unweighted. EQ bypass and peak indicators on each band; peak/shelf/notch capability.
CERWIN-VEGA	DB-10B	2	1				2	0.025				10						Yes		49.95	Operates at 30 Hz with subsonic filter below 20 Hz.
CURTIS MATHES	AQ727	2	7		Yes	No	1	0.005	110	No	No	12	No	No	No	0	1	No	No		
DAX	2711	1	27	1/3	No	Yes	†	0.01	82	No	No	12	No	No	No	1		No	No	499.00	†24 dBm.
	2712	1	27	1/3	No	No	†	0.01	82	No	No	12	No	No	No	1		No	No	399.00	
	1021	2	10	1	No	Yes	†	0.01	90	No	No	12	No	No	No	1		No	No	399.00	
	1022	2	10	1	No	No	†	0.01	90	No	No	12	No	No	No	1		No	No	319.00	
	2800	1	28	1/3	No	No	††	0.01	†††	No	No	12	Yes	P	No	24		Yes	No	2495.00	††20 dBm. †††81 dBm. Microprocessor-controlled, automatic EQ.
	EQ POD 1.0	1	28	1/3	No	No	††	0.01	†††	No	No	12	No	No	No	1		Yes	No	499.00	Programmed by Model 2800 "mother" computer; nonvolatile memory version, Model EQ POD 1.1, $559.00.
	EQ POD 1.2	1	28	1/3	No	No	††	0.01	†††	No	No	12	No	No	No	6		Yes	No	649.00	Programmed by Model 2800 "mother" computer.
DB SYSTEMS	DB-5	2	6			Yes	3	.0008	96	Yes		15								380.00	DB-2A power supply or DBP-1 cable required; with oak cabinet and gold-plated jacks, $465.00.
DBX	10/20	2	10	1	Yes	Yes	7	0.03	99	No		12	Yes	P	Yes	10	1	Yes		1200.00	Automatic room/speaker EQ with constant Q.
DENON	DE-70B	2	12	1/3	Yes	Yes	1	0.003				12					2			470.00	Built-in dynamic processor.
ESOTERIC SOUND	Re-Equalizer	2	1	10	No	No		0.02		†	†	Var.	No	No	No	36	0		No	225.00	†For replay of 78-rpm discs.
GROMMES	G4EQ	1	28	1/3	No	Yes	1	0.01	80	No	No	12	No	No	No	0	0	Yes	No	450.00	
DAVID HAFLER CO.	DH-160	2	10	1	Yes	Yes	3	0.004	108	No	No	12	No	No	Opt.	0	1	No	No	375.00	Kit, $275.00.
HARMAN/KARDON	EQ8	2	10	1	Yes	Yes	2	0.02	105	No	No	12	No	No	No	0	1	Yes	No	275.00	
JRM	Remote Unit	2	6	1	Yes	Yes	7	0.01	112	No	No	8	No	No				Yes	Yes	350.00	JRM preamp or 3PBP crossover required; continuously variable loudness.
JVC	SEA-RM20BK (RI)	2	7	1⅓	Yes	Yes	1	0.008	100	No	No		Yes	No	No	10	1	No	No		
	SEA-12BK	2	7	1⅓	Yes	Yes	1	0.03	110	No	No		No	No	No		1	No	No		
KENWOOD	GE-1100	2	12		Yes	No	9	0.01	105	No	No	12	Yes	No			2	No	No	415.00	
	GE-75	2	7		Yes	No	4	0.05	94	No	No	10	No	No			1	No	Yes	215.00	Reverb and stereo synthesizer.
	GE-55	2	12		Yes	Yes	5	0.01	110	No	No	10	No	No			1	No	No	190.00	
	GE-35	2	7		No	No	4	0.01	96	No	No	10	No	No			1	No	No	85.00	
KLARK-TEKNIK	DN300	1	30	1/3	No	Yes	10	0.01	112	No	No	12	No	No	No	0	0	†	No	995.00	†Variable bandpass filters.
	DN301	1	30	1/3	No	Yes	10	0.01	112	No	No	12	No	No	No	0	0	†	No	995.00	
	DN332	2	16	2/3	No	Yes	10	0.01	112	No	No	12	No	No	No	0	0	Yes	No	1095.00	
	DN360	2	30	1/3	No	Yes	10	0.01	112	No	No	6, 12	No	No	No	0	0	Yes	No	1625.00	
LUXMAN	G100	2	10	1	Yes	Yes	9	0.003	110	No	No	12	No	No	No	0	1	No	No	250.00	
LYDKRAFT	Tube-Tech PE1A	1	2						†	Yes	Yes									925.00	†84 dBm. Tube design.
MARANTZ	EQ130	2	10	1	Yes	Yes	1	0.005	110	No	No	12	No	No	No	0	1	No	No	130.00	
	EQ551	2	10	1	Yes	No	7	0.005	80	No	No	10	Yes	P	Yes	0	1	No	No	250.00	
McINTOSH	MQ107	2	7	1/3, 1	No	Yes	2.5	0.02	95	Yes	Yes	12, 15	No	No	No	0	0	Yes	No	650.00	
	MQ104	2	4	1/3, 1	No	Yes	2.5	0.1	95	Yes	Yes	12, 15	No	No	No	0	0	Yes	No	500.00	
MITSUBISHI	DA-6156	2	10		Yes	Yes		0.01	110	No	No	10	No	No	No	0	1	No	No	100.00	
NIKKO	EQ-30	1	30	1/3	No	Yes															XLR connectors.
	EQ-25	2	12		Yes	No		0.004					No	No	No		1				
	EQ-500	2	6		Yes	No		0.01					No	No	No		1				
NUMARK	EQ2650	2	10	1	Yes	Yes	8	0.01	102	No	No	15	Yes	Yes	Yes	0	1	No	No		
	EQ2600	2	10	1	Yes	Yes	8	0.01	102	No	No	15	No	No		0	1	No	No		
	EQ2500B	2	10	1	Yes	Yes	8	0.01	102	No	No	15	No	No		0	1	No	No		
	EQ2310B	2	10	1	Yes	Yes	8	0.01	96	No	No	15	No	No		0	1	No	No		

EQUALIZERS

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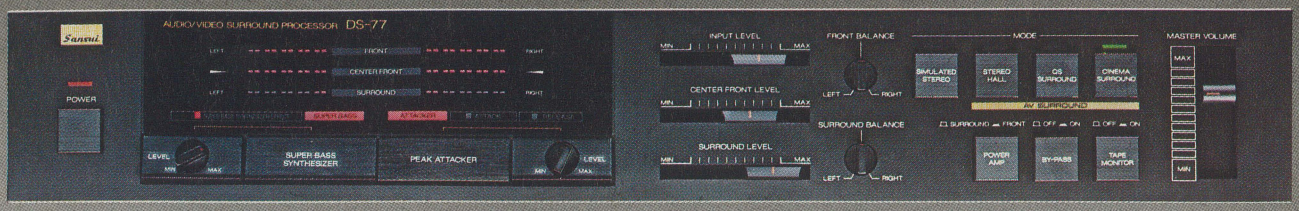
ONKYO	EQ-35	2	12	1	Yes	Yes	5	0.01	100	No	No	12, 6	No	W	No		1	Yes	No	300.00	
	EQ-25	2	10	1	Yes	Yes	5	0.01	100	No	No	12	Yes	No	No		1	No	No	210.00	
	EQ-15	2	7	1⅓	No	No	5	0.01	100	No	No	12	No	No	No		1	No	No	125.00	
PARASOUND	EQS-1	2	10	1	Yes	Yes	6	0.01	100	No	No	12	Yes	P	Yes	0	2	Yes	Yes	369.95	Tape dubbing, peak hold.
	EQ300	2	12	1	Yes	Yes	6	0.01	100	No	No	12	Yes	No	No	0	1	No	Yes	279.95	90 and 16 Hz cut only, tape dubbing.
	EQ250	2	10	1	Yes	Yes	6	0.01	100	No	No	12	No	No	No	0	1	No	Yes	249.95	Graphic LEDs, peak level meters.
	EQ225	2	10	1	Yes	Yes	6	0.01	100	No	No	12	Yes	No	No	0	1	No	Yes	199.95	Tape dubbing.
	EQ200	2	10		Yes	Yes	6	0.01	100	No	No	12	No	No	No	0	1	No	No	149.95	
	PVA-1(RI)	2	10	1	Yes	Yes	8	0.2	100	No	No	12	Yes	No	No	0	1	No	Yes	479.95	A/V processor; 18-watt stereo surround-sound amp; four video source inputs.
PIONEER	SG-60	2	12	1	Yes	Yes		0.003	120	No	No	12	No	No	No	0	2	No	Yes	269.95	
	GR-470	2	7					0.03	106			10	No	No	No	0	1	No	No	89.95	
RANE	GE 30	1	30	⅓	No	Yes	7.75	0.01	94	No	No	+12, -15	No	No	No	0	0	Yes	No	699.00	Switchable cut-only or boost/cut modes; constant Q.
	GE 27	1	27	⅓	No	Yes	7.75	0.009	91	No	No	+12, -15	No	No	No	0	0	Yes	No	499.00	Constant Q.
	GE 14	2	14	⅔	No	Yes	7.75	0.009	89	No	No	+12, -15	No	No	No	0	0	Yes	No	499.00	As above.
	ME 30	1	30	⅓	No	Yes	7.75	0.009	92	No	No	12, 6	No	No	No	0	0	Yes	No	349.00	As above.
	ME 15	2	15	⅔	No	Yes	7.75	0.009	92	No	No	12, 6	No	No	No	0	0	Yes	No	359.00	As above.
	RE 27	1	27	⅓	No	Yes	7.75	0.009	90	No	No	+12, -15	Yes	P	Yes	0	0	Yes	No	849.00	As above; window-type RTA.
	RE 14	2	14	⅔	No	Yes	7.75	0.009	88	No	No	+12, -15	Yes	P	Yes	0	0	Yes	No	499.00	As above.
	PE 15	1	5	Var.	No	Yes	7.75	0.02	92	Yes	Yes	+15, -20	No	No	No	0	0	Yes	No	389.00	Parametric; switchable peak/shelf EQ.
	SP 15	1	5	Var.	No	Yes	7.75	0.005	102	Yes	Yes	+12, -15	No	No	No	0	0	Yes	No	589.00	Studio parametric for digital recording.
REALISTIC	31-2020	2	10		Yes	Yes		0.015	95	No	No	12	Yes	No			2	No	No	130.00	Sound expander.
	31-2018	2	10		Yes			0.018	95	No	No	12	No	No			2	No	No	80.00	As above.
	31-1989	2	7		Yes			0.02	90	No	No	12	No	No			1	No	No	59.95	
SAE	E101	2	2	Var.	Yes	Yes	2.5	0.02	100	Yes	Yes	16	No	No	No	20	1	Yes	No	650.00	Parametric EQ, 32 selectable center frequencies.
SANSUI	SE-99(RI)	2	12		Yes	Yes		0.003	120	No		12	Yes	P	Yes	10	0			725.00	
	SE-88(RI)	2	14		Yes	Yes		0.008	110	No		10	Yes	No	No	5	0			500.00	
	RG-900R(RI)	2	7			Yes		0.05	70	No		10	Yes	No	No	0	0		Yes	340.00	
	SE-80	2	10		Yes			0.008	110	No		12	Yes	No	No	0	0			330.00	
	SE-800	2	10		Yes			0.008	110	No		12	Yes	No	No	0	0			290.00	
	RG-700	2	5		Yes			0.05		No				No	No	0	0		Yes	250.00	
	SE-300	2	7		Yes			0.03	75	No		12	No	No	No	0	0			90.00	
SENTREK	SHQ 1205BL	2	5		Yes	No		0.05	80	Yes	No	12	No	No	No	0	0	No	No	39.95	
	SHQ 2200B	2	10		Yes	Yes		0.05	80	Yes	No	12	No	No	No	0	0	No	No	79.95	
	SHQ 4210B	2	10		Yes	No		0.05	80	Yes	No	12	Yes	No	No	0	0	No	No	99.95	
	SHQ 4220BL	2	10		Yes	Yes		0.05	80	Yes	No	12	Yes	No	No	0		No	No	149.95	
SESCOM	PO-16	1	1	1	No	No	5	0.1	80	Yes	No	14	No	No	No	0	0	No	No	35.00	PO-1 power supply required.
	PO-40	1	5	½	No	No	5	0.1	80	No	No	12	No	No	No	0	0	No	No	45.00	As above.
SONTEC	RM-230A	2	3		No	No	1	0.002	90	Yes	Yes	12	No	No	No	0	0	No	No	1085.00	Maximum output, 15 V rms.
SOUNDCRAFTSMEN	AE2000	2	10	1	Yes	Yes	10	0.01	114	No	No	15	Yes	P	No		1	No	No	799.00	Differential comparator system; auto-scan.
	DC2215	2	10	1	Yes	Yes	10	0.01	114	No	No	15	No				1	No	No	399.00	Differential comparator system; with test record.
	DC2214	2	10	1	Yes	Yes	10	0.01	106	No	No	12	No				1	No	No	299.00	As above.
	SE550	2	10	1	Yes	Yes		0.01	110	No	No	15	No				1	No	No	199.00	
SYMMETRIC SOUND SYSTEMS	EQ-2	2	12	5/6	No	No	8.5	0.02	104	No	No	10	No	No	No	0	1	No	No	89.00	Kit.
	EQ-3S	2	24	0.4	No	No	8.5	0.02	99	No	No	10	No	No	No	0	0	No	No	200.00	As above.
TEAC	EQA-5	2	10		Yes	Yes	0.32	0.03	80	No	No	12	No	No	No	0	1	No	No	149.00	
	EQA-10 II	2	10		Yes	No	0.32	0.03	80	No	No	12	No	No	No	0	1	No	No	199.00	
	EQA-20	2	10		Yes	Yes	0.32	0.01	90	No	No	12	Yes	No	No	0	2	No	No	249.00	
TECHNICS	SH-8065	2	33	1⅓	Yes	No	†	0.002	110	No	No	3, 12	No	No	No	0	1	No	No	600.00	†Switchable output, 0.15/1 V.
	SH-8055K	2	12	⅔	Yes	No	1	0.003	110	No	No	12	Yes	P	No	0	2	No	No	365.00	
	SH-8066	2	12	1	Yes	No	1	0.003	107	No	No	12	Yes	P	Yes	8	2	No	No	525.00	Auto room EQ.
	SH-8028	2	7	1⅓	Yes	No	1	0.005	110	No	No	12	No	No	No	0	1	No	No	145.00	
	SH-8046K	2	7	1⅓	Yes	No	1	0.003	107	No	No	12	No	No	No	4	1	No	No	300.00	
VECTOR RESEARCH	VQ-110	2	10	1	Yes	Yes	1	0.009	108	No	No	12	No	No	No		1	No	No	119.95	
	VQ-120	2	10	1	Yes	Yes	1	0.009	108	No	No	12	Yes	No	No		1	No	No	199.95	
	VQ-130	2	10	1	Yes	Yes	1	0.009	108	No	No	12	Yes	Yes	Yes		1	No	No	299.95	
YAMAHA	GE-60	2	10		Yes	Yes	1	0.005	110	No	No	15	Yes	P	Yes		2	Yes		399.00	
	GE-40	2	10		Yes	Yes	1	0.005	110	No	No	15	No				1	Yes		229.00	
	GE-30	2	10		Yes	Yes	1	0.005	105	No	No	12	No				1	Yes		149.00	
	GE-20	2	10		Yes	Yes	1	0.005	105	No	No	12	No				1	Yes		129.00	

ADD SANSUI'S DS-77 TO YOUR STEREO A/V SYSTEM.



AND YOUR LIVING ROOM WILL SOUND A BIT BIGGER.

Hold on to your popcorn! Sansui introduces CinemaSurround: the sensory experience of 360° theatre sound brought right into your home.

With our DS-77 Sound Processor, you'll see, hear and feel the difference as CinemaSurround totally envelops you.

We admit this could cause sensory overload. So try it without the movie. CinemaSurround enhances everything from radio to records. From cassettes to compact discs.

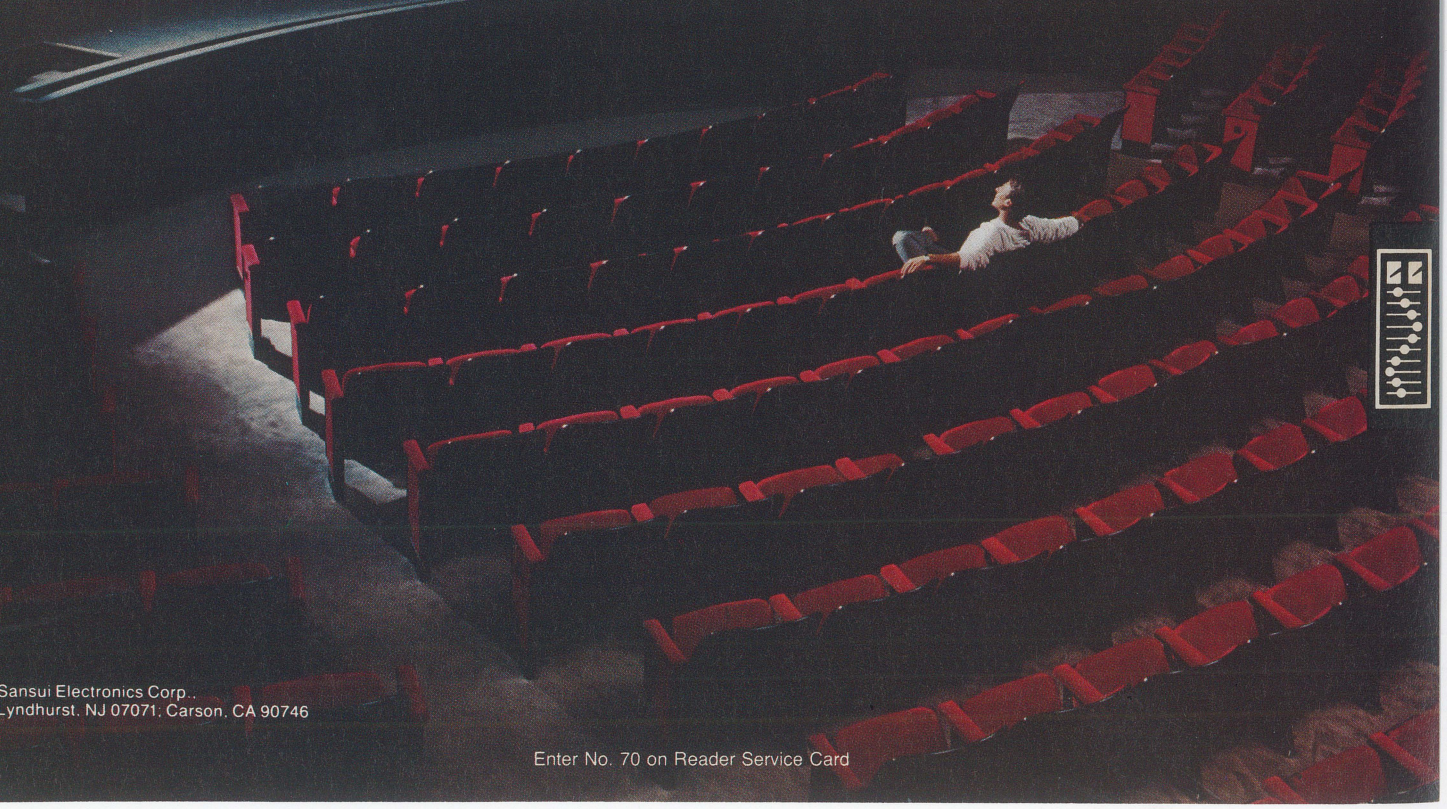
You can also produce CinemaSurround with our SX-V1000 and AV-C10 Control Centers. It's further proof that when it comes to A/V components and systems, nobody's got it together like Sansui.

CinemaSurround. The experience is so incredible, you could sell tickets.

CINEMA SURROUND

Sansui

Putting More Pleasure in Sound.



Sansui Electronics Corp.,
Lyndhurst, NJ 07071; Carson, CA 90746

Enter No. 70 on Reader Service Card

Sansui's SX-700 is the most intelligent choice for upgrading your system or beginning a new one.

Sansui takes performance to heart. That's why our new SX-700 AM-FM stereo receiver belongs at the heart of your system. With solid power,* it easily handles the surges and dynamic highs of digitally-sourced music.

Engineered for performance and designed for durability, the SX-700 has a metal chassis, cover and faceplate, not plastic like some of our competitors. It also features solid feel knobs and buttons, which let you know at first touch that the SX-700 is a first class performer.

Put Sansui's SX-700 at the heart of your system and get pure performance without missing a beat. The idea is just as smart as it sounds.

*40 watts per channel, minimum RMS, both channels driven into 8 ohms at 20–20,000 Hz, with no more than 0.041% THD.

Start smart with this pure performance receiver.

Sansui Electronics Corp., Lyndhurst, NJ 07071, Carson, CA 90746

Sansui

Putting More Pleasure in Sound.

Enter No. 92 on Reader Service Card

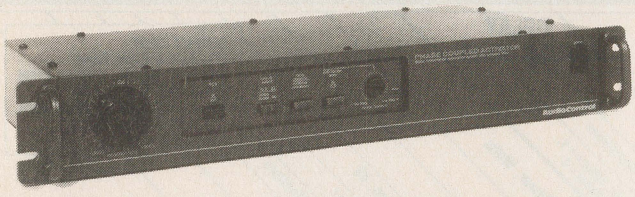
AMBIENCE & SURROUND-SOUND PROCESSORS

MATRIX CODE
A—Ambisonics
D—Dolby Surround
H—Hafler Dynaquad
QS—QS
SQ—SQ
O—Other

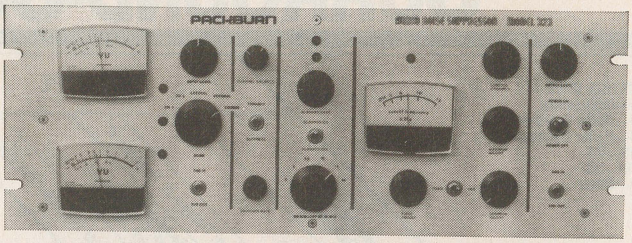
OUTPUT CODE
2F—Left & Right Front
3F—Left, Center, & Right Front
2B—Left & Right Back
3B—Left, Center, & Right Back
2S—Left & Right Sides
SW—Subwoofer

MANUFACTURER	Model (RI)=Remote Included, (RO)=Remote Optional	Matrix—See Code	UNIT TYPE: Time Manipulation: Delay=D, Reverb=R	UNIT TYPE: Other Manipulation Techniques: Frequency Shaping=F, Comb Filter=C, Phase Manipulation=P, Other=O	UNIT TYPE: Number and Use of Outputs—See Code	DELAY FUNCTIONS: Delay Time, mS	DELAY FUNCTIONS: Number of Hall/Room Simulations	DELAY FUNCTIONS: Hall/Room Adjustments: Volume=V, Shape (Height/Width Ratio)=S	Continuous Amp Power, Watts	THD, %	S/N Ratio, –dB	Channel Separation, dB	Stereo Simulation?	Number of Tape Monitors	Video Inputs?	Price, $	Notes
AKAI	AS-P302(RI) AS-P205(RO)	A/D A	D D/R	F/P F/P	2F, 2B 2F	30	0 3		†	0.3	90	60	No	1 1	4 No	300.00 165.00	†25 watts x 2 on rear channel.
APHEX SYSTEMS	AVM8000(RI)	SQ/O†			3F, 3B, 2S, SW					0.06	95	††	No	1	No	895.00	†Dolby-compatible cinema mode. ††Adjacent channels, 15 dB; opposite channels, 60 dB.
AUDIOSOURCE	SS-One AV-Three AV-Four	D H H	D	F/P P P	2F, 2B 2F, 2B	10-50	Var.		15 x 2 15 x 2		85 80 80		Yes Yes Yes	5 5	No Yes Yes	289.95 199.95 199.95	With two LS-Ten speakers, $339.95. DNR, 5-in/5-out A/V switcher, video fader and enhancer. DNR, graphic EQ, 5-in/3-out A/V switcher.
CANON	SP-10	O		P	2F, 2B					0.003	90		Yes	3	Yes	269.00	Input mixer, A/V switcher.
DENON	AVC-500II	D	D	F/C/P	2F, 2B		2	V	30 x 2	0.3	90		Yes	3	Yes	375.00	Includes five-band graphic EQ; video enhancer switch.
DYNAVECTOR/ AUDIO INTERFACE	SSP-1	O	D	O	2F, 2B	Var.	2	V		0.005	80	60	No			500.00	Frequency-dependent analog delay (not BBD).
KENWOOD	SC-75	D	D/R		2B	10-30	2		5.2 x 2	0.9	80		No	0	No	235.00	Optional speakers, $49.00 per pair.
LUXMAN	F-105(RI)	A/D/ SQ/O	D		3F, 2B	10-35			25 x 2	0.05	80		Yes	2	Yes		
MARANTZ	AVS351	D	D	C	2F, 2B	15-30			20 x 2	0.25			Yes	1	No	300.00	With two minispeakers.
NEC	AV-300E(RI) AVD-700E (RI) A-1300E(RI)	D/O D/O D/O	D D D		3F, 2B, 2S, SW 3F, 2B, 2S, SW 2F, 2B	20 20 0-92			30 x 4, 60 x 2 50 x 4, 130 x 2	0.045 0.005 0.05	100 100 90	60 60	Yes No Yes	1 1 2	Yes Yes No	499.00 699.00 699.00	
PARASOUND	PVA-1 VSE-1	D H	D	F/P F/P	2F, 3B 2F, 2B	5-30	1 1		18 x 2 12.5 x 2	0.5 0.5	80 80		Yes Yes	2	4 2	479.95 129.95	Stereo expander, antenna switch.
PIONEER	SP-101 SP-X707(RI) VSA-30(RI)	D	D D D		3F, 2B † 	Sel. Sel. 			 †† 30 x 2, 10 x 2	0.5 3.0 0.4	85	60	Yes Yes Yes	1 1 1	No No 2	350.00 319.95 299.00	Includes bass synthesizer. †Front outputs, two fixed and two variable; two back outputs. ††30 watts per channel on rear only.
REALISTIC	15-1278	O	D	O		5-20				0.2		55	Yes	1		89.95	DNR, stereo expander.
SANSUI	DS-77 AV-C10	QS QS	D D		3B 2B		2 2		10 x 2 15 x 2				Yes Yes		Yes Yes	400.00 320.00	
SANYO	SA100	D/O	D	None	2F, 2B	15-30			20 x 2	0.05	80 dBA		Yes	0	No	199.95	
SHURE	HTS5000(RI) AVC20(RI)	D D/O	D D/R	O F/C/P	3F, 2B, SW 3F, 2B, SW	16-36 20	1 3		 30 x 4, 60 x 2	0.1 0.1	90 90	65 60	Yes Yes	1 3	No 3	599.00 599.00	Stereo expander and synthesizer, digital delay.
SONY	SDP-505ES	D/O	D/R	O	2F, 2B, SW	0-90			16 x 2	0.008	90		Yes			700.00	Full digital (16-bit, 44.1-kHz) delay processing.
SURROUND SOUND	SSI-720(RI) SSI-360II	D D	D/R D/R	F/P/O F/P/O	3F, 2B, SW 3F, 2B, SW	0-30 10-30	5 Var.		 25 x 2	0.015 0.025	110 105	90 75	Yes Yes	1 1	No No	599.95 379.95	Full-logic decoding. Center-logic decoding.
TEAC	AV-550D	D/O	D	C/P	3B	5-30			12 x 2	1	55		Yes		Yes	599.00	Video fader, enhancer.
TECHNICS	SH-AV44	D/O	D	P	3F, 2B	15-30			25 x 2	0.1	90		Yes	1	3	350.00	
3D ACOUSTICS	10	O	D	P	3F, 2B, SW											295.00	Passive; built into subwoofer; also available as part of Models 610 System and 610 Surround speakers.
YAMAHA	DSP-1(RI) SR-50 AVC-50	D/O D D	D/R D D	F/C/P/O C C	5F, 2B, SW 2F, 2B 2F, 2B	† 10-30 10-30	12 4 4	V/S	 25 x 2 45 x 2	0.002 0.03 0.05	110 106 103	 65	No Yes Yes	1 1 2	 2	849.00 279.00 449.00	†1 to 3500 mS. Digital delay processing.

SIGNAL PROCESSORS

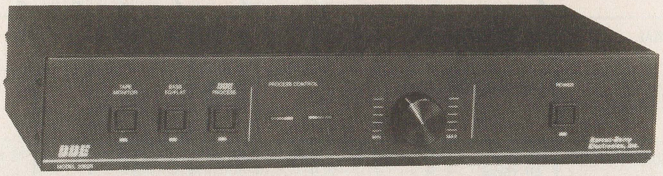


AUDIO CONTROL PHASE COUPLED ACTIVATOR



PACKBURN 323

SSS PS-1



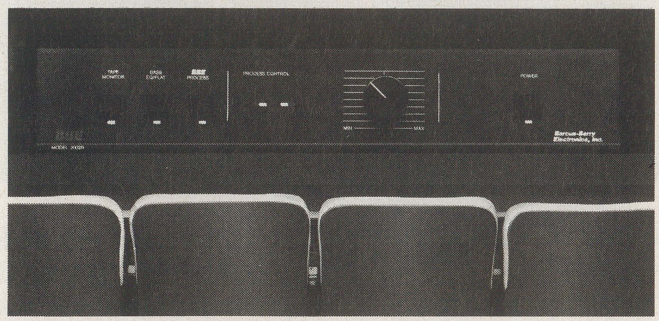
BARCUS-BERRY 2002R

MANUFACTURER	Model (RI) = Remote Included, (RO) = Remote Optional	Type of Processing	Function: Closed Loop = C, Open Loop = O, Transient = T	Application: Tape Rec: = R, Phono = P, FM = F, Video = V, Universal = U	Simultaneous Encode/Decode?	Degree of Noise Reduction, dB @ Hz	Record = R, Play = P, Both = RP	THD, %	Frequency Response, Hz to kHz, ±dB	Price, $	Notes
ACE AUDIO	4000	Subsonic Filter		RPF	No	†	RP	0.002	20-20 +0,-3	98.50	†18 dB/octave slope below 20 Hz.
	4100	Infra/Ultrasonic Filter		RPF	No	†	RP	0.002	20-20 +0,-3	108.50	†Low, 18 dB/octave slope; high, 12 dB/octave.
	4000-X24	Subsonic Filter		RPF	No	†	RP	0.002	20-20 +0,-3	132.00	†Low, 24 dB/octave slope.
	4100-X24	Infra/Ultrasonic Filter		RPF	No	†	RP	0.002	20-20 +0,-3	142.00	†Low, 24 dB/octave slope; high, 12 dB/octave.
AUDIO CONTROL	Phase Coupled Activator	Proprietary	O	U	No		RP	0.005	30-20 ±0.5	259.00	Video inputs; restores lower frequencies.
BARCUS-BERRY ELECTRONICS	2002	Load Reactance Compensation	O	U			RP	0.1	20-20 ±0.2	250.00	Compensates for amp/speaker interface problems.
BOULDER AMPLIFIERS	Body Builder	Variable Harmonics Generator	O	U		None	RP		20-20 ±0.1	399.00	Simulates tube sound.
DBX	3BX-DS	Dynamic Expander	O	U		20 @ 20-20k	RP	0.15	20-20 ±0.5	499.00	Three-band expansion, OverEasy compression, impact restoration circuit.
	1BX-DS	Dynamic Expander	O	U		20 @ 20-20k	RP	0.15	20-20 ±0.5	279.00	As above but one-band (full-band) processing.
	224X-DS	dbx Type II	C	RV	Yes	40 @ 20-20k	RP	0.1	40-20 ±0.5	299.00	Two tape monitors, with dubbing.
	150X-DS	dbx Type I	C	R	Yes	40 @ 20-20k	RP	0.1	20-20 ±0.5	249.00	For recorders with response of 20 Hz to 20 kHz, ±1 dB (such as 15 ips or PCM); expands PCM dynamic range to 115 dB.
NUMARK	NR 400	2:1 Compander	O	RV		20 @ 10k	RP	0.08	10-30 ±1	299.95	
PACKBURN	123	Transient, Dynamic NR	OT	U	No	Varies	RP	0.05	Sel.	1950.00	Mono, for playing old records; has three NR processors.
	323	Transient, Dynamic NR	OT	U	No	Varies	RP	0.05	Sel.	2450.00	Mono/stereo; has three NR processors.
PIONEER	EX-9000	Dynamic Range Expander	C	U				0.8		229.95	Three-band expansion: 50 Hz, 500 Hz, and 5 kHz.
SYMMETRIC SOUND SYSTEMS	ASRU	Noise Filter/ Expander	O	U		18	P	0.2	20-20 ±1	190.00	Kit, $120.00.
	PS-1	Click Eliminator	O	P			P	0.1	20-20 ±1	129.95	Kit, $79.95.
YGGDRASIL DESIGNS	EX 110(RI)	Expander	O	U	No	20	P	0.01	15-30 ±0.5	500.00	Remote control of sensitivity, expansion, and release time.
	EX 120	Expander	O	U	No	20	P	0.01	15-30 ±0.5	350.00	
	DF 100(RI)	Dynamic Filter	O	U	No	30	P	0.01	15-30 ±0.5	600.00	Remote control of sensitivity and release time.
	DF 125	Dynamic Filter	O	U	No	30	P	0.01	15-30 ±0.5	400.00	

Nothing sets the stage for live sound like BBE.™

Few things can equal the excitement of a live performance. And listening to an album, tape or CD at home was as close as you could get. Until now. Because BBE can make your home music system sound more *live* than it's ever sounded before. It does so by correcting anomalies that occur when the signal is sent from the amplifier to the speakers, distortion inherent in every amplifier/speaker interface. Technically, BBE restores the proper harmonic structure of sound, thereby correcting amplitude and phase distortion. But in aesthetic terms, BBE enables you to hear more of the extraordinary nuances and subtleties that make listening to a live performance so uniquely satisfying.

BBE utilizes a unique technology we've developed that can improve *any* sound system regardless of cost or design. It increases the clarity, separation and presence of any type of music, from the most delicate chamber music to powerful big bands or rock groups. It also works with or without EQ or other processing devices. And the amplitude of BBE correction can be adjusted for equipment or room variations. BBE lets you hear an accuracy of detail and a richness of texture that you've never heard from your sound system before.



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NOW YOU DON'T NEED A COMPETITION LICENSE TO RIDE HOME ON THE WINNER: RE71.

Here in the land of the Double Nickel, "racing heritage" and "winning performance" are easy to assert. Hard to test.

So we launched our new V-rated RE71 Potenza at the track. We made it available in 1985 to SCCA competition license holders, hoping they would carry it into the crucible of competition. We were not disappointed.

Neither were they.

A winner in its first season of showroom stock,* the RE71 showed particular aptitude for the endurance end of the racing spectrum—good news for those who like their thrills to last.

And now—just as we announce general availability of RE71s—someone *has* put them to a test. The February '86 *Car and Driver* reports on their comparison of ten 50-series radials. And the RE71 did so well, we recommend a quick lap of the public library to check out the results.

None of this is a surprise when you consider this Potenza's pedigree. The V-rated RE71's unidirectional tread pattern is daringly similar to that of our European Formula 3000 racing rain tire. Its race-bred crown contour and high-grip compound are designed for crisp handling on dry surfaces. And its hard-rubber insert near the rim reduces sidewall flex for cornering dexterity.

See the complete line of Bridgestone Potenza performance radials at your Bridgestone retailer. For the one nearest you, call 1-800-453-9000.

*Tires shaved to racing depth.

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BRIDGESTONE

WHERE NEW IDEAS TAKE HOLD.

CROSSOVERS

MANUFACTURER	Model	Type: Active = A, Passive = P, Combined Active & Passive = C	Mono = M, Stereo = S, Stereo with Mono Subwoofer Output = X, Other = O	Number of Frequency Bands per Channel	Crossover Frequency(s), Hz	Crossover Slope(s), dB per Octave	Independent High- and Low-Pass Frequency Selection?	Frequency Setting: Fixed = F, Switchable = S, Variable = V, Plug-in Modules = P	Subwoofer Outputs: Stereo = S, Mono = M, Inverted for Mono Bridging = B	Level Controls: High-Pass = H, Midrange = M, Low-Pass = L (Or Total Number of Controls)	S/N Ratio, – dB	Distortion, %	Nominal Input Level, V	Input Impedance, Ohms	Output Impedance, Ohms	Price, $	Notes
ACCUPHASE	F-15	A	S	3	70-12.5k	18/12	Yes	P		H/M/L	100	0.003				1850.00	
ACE AUDIO	6000	A	M/S/X	2, 3	200-18k	12	Yes	P	S/M	†	90	0.002	1.0	100k	100	156.00	†Either high- or low-pass control.
	6000-6	A	M/S/X	2, 3	40-18k	6	Yes	P	S/M	†	90	0.002	1.0	50k	100	175.00	†As above.
	6000-6-SF	A	M/S/X	2, 3	40-18k	6	Yes	P	S/M	†	90	0.002	1.0	50k	100	200.00	†As above. 18-dB/octave subsonic filter.
	5000	A	X	2	†	18	Yes	F	S/M/B	L	90	0.002	1.0	50k	100	161.00	†100 Hz standard, others (from 40 to 200 Hz) available. Kit, $120.00.
	5000-6	A	X	2	†	††	Yes	F	M/B	L	90	0.002	1.0	50k	100	161.00	†Crossover frequency as above. ††6 dB on satellites, 18 dB on woofer.
	6500-DSB	A	M/S/X	2, 3	40-199	12	Yes	P	†	H/M/L	90	0.002	1.0	50k	100	156.00	†Stereo or mono subwoofer outputs.
	6000-SF	A	M/S/X	2, 3	200-18	12	Yes	P	S/M	H/M/L	90	0.002	1.0	100k	100	181.00	18-dB/octave subsonic filter.
	5000-SF	A	X	2	†	18	No	F	M/B	L	90	0.002	1.0	50k	100	186.00	†100 Hz standard, others (from 40 to 200 Hz) available. Filter as above.
	6500-SF	A	S/X	2	40-199	12	Yes	P	S/M	H/M/L	90	0.002	1.0	100k	100	181.00	Filter as above.
APOGEE ACOUSTICS	Active Crossover	A	S	3	200-400, 5k-8k	6	Yes	V	No	H/M/L	100	0.01		100k	560	1000.00	
ATHENA	T/C-1	A	S	2	15-15k	12/6	No	V	S	H/L	96	0.01	0.75	100k	560	1100.00	
	TC-2	A	S	2	15-15k	12/6	No	V	S	H/L	96	0.01	0.75	100k	560	1800.00	
AUDIO CONCEPTS	Shadow MKIV	A	S/X	2, 3	50-5k	18, 6	No	P	S/M	L						249.00	Kit. Fixed-frequency kit with larger power supply, $289.00.
AUDIO CONTROL	Phase Coupled Activator	A	S	2	20-20k	18	No	P	S	L	118	0.005	1.0	100k	150	259.00	Proprietary Sound Restoration circuits.
	Richter Scale	A	S/X	2	20-20k	24	No	P	S/M/B	L	120	0.005	1.0	100k	150	349.00	Linkwitz-Riley alignment; ½-octave EQ and analyzer.
AUDIO RESEARCH	EC21	C	X	2	50-5k	6/18, 6/6		F	M	L	90	0.01	0.75	50k	500	795.00	Passive 6-dB high; active tube-based 6/18-dB low.
BGW SYSTEMS	20	A	X	3†	10-19k	18	Yes	S/P	M	5	91	0.02	0.1	15k	22	829.00	†Also usable as mono 4-way. Balanced line; 10-Hz filter.
	Xover 1	A	M	2	100-8k	18	No	S	M	No	100	0.02	1.0	15k	100	99.99	Accessory p.c. board for power amps; requires ±16 to ±100 V.
BIAMP SYSTEMS	SX-23	A	O	†	100-10k	18	Yes	S/V	S/M	4	103	0.01	0.775	10k	150	499.00	†Usable as stereo 2-way or mono 3-way.
	SX-35	A	O	†	50-5k, 200-20k	18	Yes	S/V	S/M	6	103	0.01	0.775	10k	150	599.00	†Usable as stereo 3-way or mono 5-way.
BROOKE SIREN SYSTEMS	FDS360	A	O	†	Opt.	24	Yes	P		4	105	0.05	0.75	10k	††	1025.00	†Usable as stereo 3-way or mono 4-way. ††0.05 ohm for 600-ohm load.
DAX	321	A	M/S	2, 3	100-1.6k, 1k-16k	18	Yes	V	S/M	H/M/L	90	0.01	0.75	Sel.	Sel.	359.00	
DB SYSTEMS	DB-3-18	A	S/X	2, 3	Opt.	18†	Yes	F	S/M/B	H/M/L	86	0.0008	1	90k	1.4k	From 400.00	†6 or 12 dB also available.
	DB-3-24	A	S/X	2	Opt.	24	Yes	F	S/M/B	H/L	100	0.003	1	90k	1.4k	570.00	
	DBR-3XL	A	S/X	2	50, 70, 100, 150	18	No	S	S/M	H/L	86	0.0008	1	90k	1.4k	650.00	
DBX	120X	A	X	2	50-210	12/6	No	V	M	4	95	0.05	1			299.00	Phase-coherent; includes bass synthesizer.
DE COURSEY	120-B4	A	M/S/X	2	Opt.	18/12/6	Yes	P	S/B	Opt.	90	0.008	9	100k	100	153.00	Optional subsonic and bass boost filters.
	120-T8	A	M/S/X	3	Opt.	18/12/6	Yes	P	S/B	Opt.	90	0.008	9	100k	100	253.00	As above.
	120-Q8	A	M/S/X	4	Opt.	18/12/6	Yes	P	S/B	Opt.	90	0.008	9	100k	100	337.75	As above.
DENNESEN	Xover	A	S/X	2	80-200	24	No	P	S/M	H			1	47k	100		
DUNTECH	Thor	A	M/S	1	110	6	Yes	F	S/M	L	93	0.002	0.80	20k	120	225.00	
FOCAL	EC-1000	A	S	3	95/130/390, 2.3k/3.9k/5.5k	24, 24	Yes	V	S	H/M/L						230.00	Kit.
GOLD SOUND	AX-1	A	S	2	60-16k	18	No	V	S	H	90	0.05	1	15k	470	360.00	
GSI	X-1-2	C	O	2	10-20	12	Yes	F	S†	H/L	92	0.001	1	100k	10k	275.00	†Optional mono subwoofer output.
	X-13	C	O	3	10-20	12	Yes	F	S†	H/M/L	92	0.001	1	100k	10k	375.00	
JANIS	Interphase 1-A	A	X	2	100	18	No	F	M	L	98	0.01	0.6	200k	100	675.00	Integral 100-watt bass amp.
	60-18	C	X	2	63	6, 18	No	F	M	L	98	0.01	0.6	200k	100	395.00	As above but 60 watts.
	Interphase 3/A	A	X	2	100	18	No	F	M	L	96	0.02	0.6	200k	100	†	†Included with Model 3/A subwoofer. As above but 50 watts.

CROSSOVERS

MANUFACTURER	Model	Type: Active = A, Passive = P, Combined Active & Passive = C	Mono = M, Stereo = S, Stereo with Mono Subwoofer Output = X, Other = O	Number of Frequency Bands per Channel	Crossover Frequency(s), Hz	Crossover Slope(s), dB per Octave	Independent High- and Low-Pass Frequency Selection?	Frequency Setting: Fixed = F, Switchable = S, Variable = V, Plug-In Modules = P	Subwoofer Outputs: Stereo = S, Mono = M, Inverted for Mono Bridging = B	Level Controls: High-Pass = H, Midrange = M, Low-Pass = L (Or Total Number of Controls)	S/N Ratio, –dB	Distortion, %	Nominal Input Level, V	Input Impedance, Ohms	Output Impedance, Ohms	Price, $	Notes
JRM	3PBP/X4	A	O	4	10-2k, 100-5k, 100-50k	18	Yes	P	S/M/B	8†	110	0.01	Sel.	50k	100	750.00	†1-dB steps. Stereo, mono, and bridging outputs for all sections; infrasonic and ultrasonic filters.
	3PBP/X2	A	O	2	10-5k, 100-50k	18	Yes	P	S/M/B	4†	110	0.01	Sel.	50k	100	450.00	As above.
JS AUDIO	2CX	P		2	3k	12, 18					91					150.00 Pair	
	3CX	P		3	700, 4k	12/12, 12/18					94					200.00 Pair	
KINETIC AUDIO	Three-Point	P	M	3	60, 90, 180	6	Yes	S	M	H/M	95	0.01		8	Var.	150.00	For use with small speakers.
	Four-Point	P	M	4	60, 90, 180, 350	6	Yes	S	M		95	0.01		8	Var.	150.00	For use with subwoofers.
KRELL	KRX	A	S	3	0.05-20k	6 or 12	Yes	P	S	H/M/L	100	0.001	1	100k	47	1400.00	External power supply.
MARK LEVINSON	LNC-2	A	S	2	Sel.	Sel.	Yes	P		H/L						3125.00	Three-way version, $3625.00.
NAIM AUDIO	NAXO 2/4	A	S	2	2.5k	18	No	P								695.00	
	NAXO 3/6	A	S	3	375, 3k	18	No	P								695.00	
NELSON-REED	AC 1204	A	M/S	2	62	6/12/ 24/48	No		S/M	L	118	0.007	†	33k	600		†Maximum, 20 V peak to peak.
NESTOROVIC LABS	NL 12	A	S	†	200, 1k	18, 12	No	F	S	H/M/L	90	0.01	1	50k	100	660.00	†2- or 3-way, switch-selectable.
NIKKO	CO-23	A	M/S	†		12/18	Yes	S	S	H/L	90					749.95	†Usable as stereo 2-way or mono 3-way.
RANE	AC 22	A	M/S	†	75-3.6k	24	No	V		H/L	92	0.02	0.75	20k	100	389.00	†Usable as stereo 2-way or mono 3-way. Linkwitz-Riley alignment.
	AC 23	A	M/S	†	70-1k, 450-7k	24	Yes	V		H/M/L	92	0.02	0.75	20k	100	499.00	†Usable as stereo 3-way, mono 4-way, or mono 5-way. Alignment as above.
ROHRER	DX100	P	M	2	100	6	No	F	M	No						300.00 Pair	
SIDEREAL AKUSTIC	Dahlia	P	S	2	3k	24										†	†Plans and capacitors, $159.00; plans and all electrical components, $199.00.
	Jordan	P	S	2	150	12										†	†Plans and all electrical components, $279.00/ channel; with smaller gauge inductors and different capacitors, $139.00/channel.
STRELIOFF	EX 1	C	S	4	Sel.	Sel.	Yes	P	S	4	97	0.01	1.0	Sel.	Sel.	850.00	Special order; requires RS 1 power supply.
	EX 11	C	O	4	Sel.	Sel.	Yes	P	S	4	102	0.01	1.0	Sel.	Sel.	1250.00	Special order; dual mono; requires RS 11 power supply.
	XM 1	C	M	3	Sel.	Sel.	Yes	P	M	3	97	0.01	1.0	Sel.	Sel.	550.00	Special order.
SUMO	Delilah	A	S	2	50, 63, 80, 100, 120	†	Yes	S	S/M/B	L	95	0.007	2	50k	100	399.00	†Low-pass, 12 or 18 dB/octave; high-pass, 12 dB/octave.
THRESHOLD	PCX	A	M/S/X/O	2	75-1.6k, 750-16k	18	No	P	S/M/B	H/L		0.01		20k	1.5k	1290.00	
VANDERSTEEN AUDIO	WX-4	C	S	2	80	6	No	F	S	L	90	0.01	0.75	100k	400	450.00	
VENDETTA RESEARCH	TPC-1	A	S	2	60-300	6/12	No	V	S	L	100	0.01	1	24k	100	450.00	
VMPS	2 (TPC-1)	A	S	2	60-300	6/12	No	V	S/M	L	100	0.01		24k		449.00	
	Passive Crossover	P	M	2	100	6/12	No	F	M	H						40.00	Quasi-second-order.

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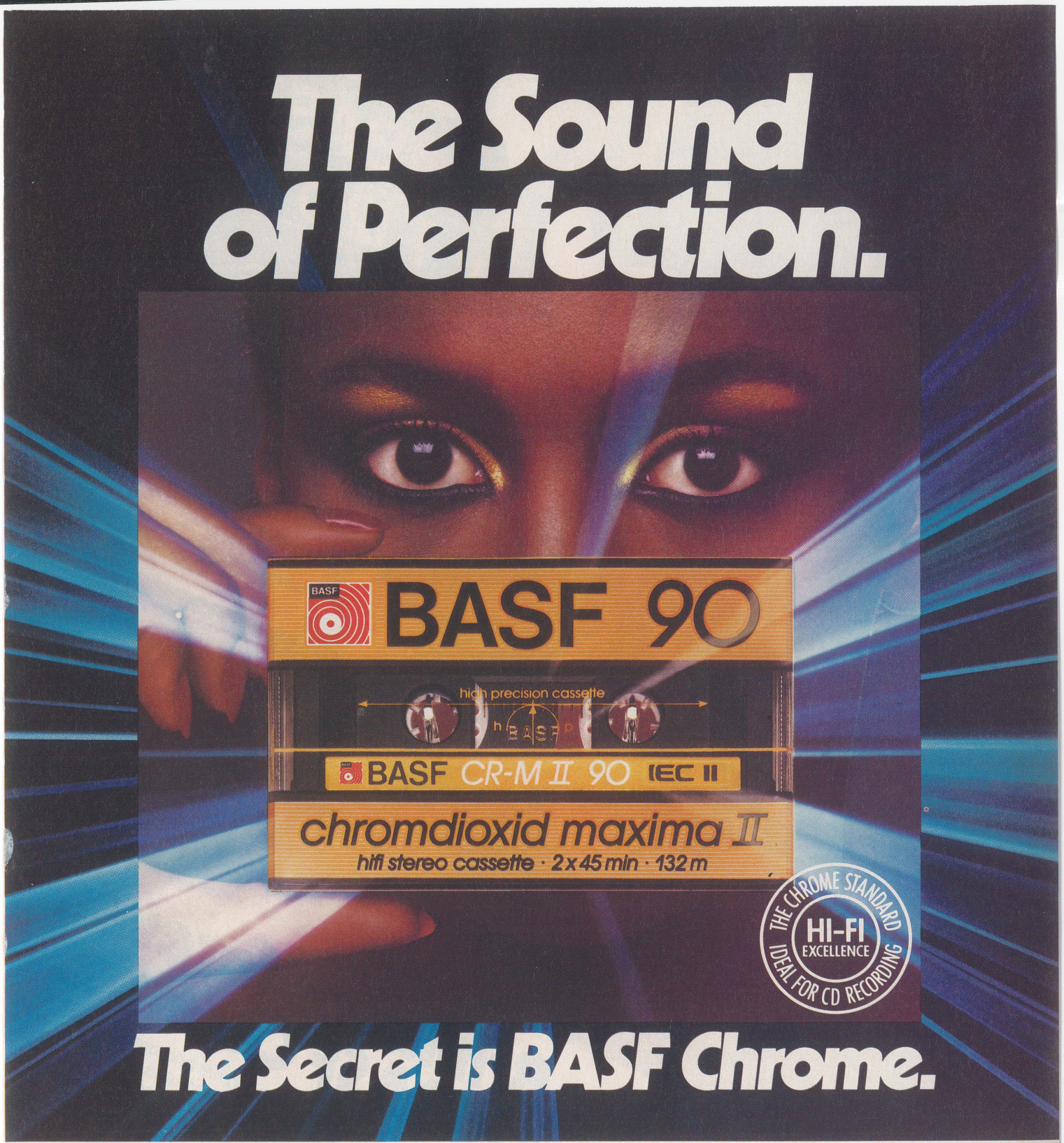

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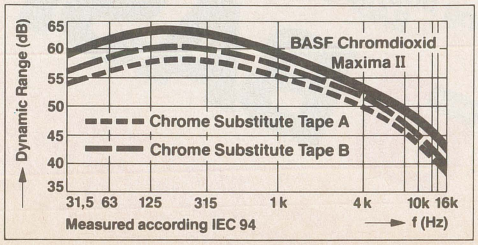

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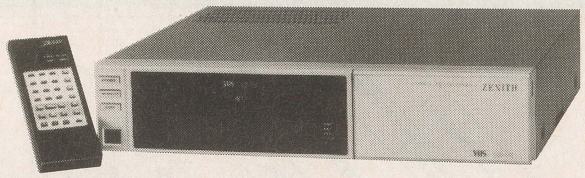
Hi-Fi VCRs



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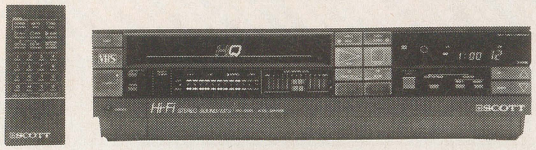

SCOTT SVR-330S

QUASAR VH5865

MANUFACTURER	Model	Format	Portable = P, Table Model = T	Standard Audio Tracks: Mono = M, Stereo = S, Stereo with Dolby NR = D	Frequency Response, Hz to kHz, ±dB	Audio S/N Ratio, – dB, re: 0 dB	THD, %	Separation, dB, at 1 kHz	Simulcast Recording?	Dynamic Range, dB	Wow & Flutter, Wtd. Peak, %	Stereo TV (MTS/SAP) Capability: Built Into Tuner = B, Decoder Jack = J	Programmability: Number of Days/Number of Events	Audio Dubbing?	Phone Jack?	Volume Control on Phone Jack?	Number of Tape Speeds, Record/Play	Price, $
AKAI	VS-626U	VHS	T	M	20-20 ±3	70		65	Yes	80	0.005	B	28/8	Yes	Yes	No	2/3	1050.00
	VS-565U	VHS	T	M	20-20 ±3				Yes	90	0.005	B	14/6	Yes	Yes	No	2/3	880.00
	VS-555U	VHS	T	M	20-20 ±3				Yes	90	0.005	B	14/6	Yes	Yes	No	2/3	850.00
	VS-525U	VHS	T	M	20-20 ±3				Yes	90	0.005	B	14/6	Yes	Yes	No	2/3	780.00
	VS-515U	VHS	T	M	20-20 ±3				Yes	90	0.005	B	14/6	Yes	Yes	No	2/3	750.00
CANON	VR-HF720	VHS	T	M	20-20				Yes	90	0.005	B	31/8	No	Yes	Yes	3/3	1050.00
	VR-HF600	VHS	T	M	20-20				Yes	80	0.005	J	14/4	No	Yes	Yes	3/3	899.00
	VR-40A VCR/ VT-50A Tuner	VHS	P	M	20-20				Yes	80	0.005	No	14/8	Yes	Yes	No	3/3	1600.00
CURTIS MATHES	AV758	VHS	T										21/8				3/3	
	AV755	VHS	T										14/2				3/3	
EMERSON	VCS977H	VHS	T	S	20-20				Yes	80	0.005	Yes	14/4	Yes	Yes	No	2/3	999.95
	VCS966H	VHS	T	S	20-20				Yes	80	0.005	Yes	14/4	Yes	Yes	No	2/3	799.95
	VCS955H	VHS	T	M							0.015		14/4				2/3	699.95
	VCR951H	VHS	T	M							0.015		14/4				2/3	599.95
	VCR920	VHS	T	M	50-10								14/4				3/3	499.95
	VCR872	VHS	T	M									21/8				3/3	499.95
FISHER	FVH-960B	VHS	T	M	20-20	80			Yes		0.005	B	14/9	Yes	No	No	3/3	849.00
	FVH-980B	VHS	T	M	20-20	90			Yes		0.005	B	365/8	Yes	No	No	3/3	899.00
	FVH-990B	VHS	T	D	20-20	90			Yes		0.005	B	365/8	Yes	Yes	Yes	3/3	999.00
GENERAL ELECTRIC	9-7320	VHS	T	M	20-20	60			No	80	0.015 wrms	J	14/4	No	Yes	Yes	3/3	719.99
	9-7350	VHS	T	M	20-20	60			No	80	0.015 wrms	J	14/4	No	Yes	Yes	3/3	749.99
	9-7400	VHS	T	M	20-20	60			Yes	80	0.015 wrms	B	21/8	No	Yes	Yes	3/3	999.99
HARMAN/KARDON	VCD2000	VHS	T	M	20-20 ±3	80	0.5	60	Yes	80	0.002	B	21/4	Yes	No	No	3/3	899.00
	VCD4000	VHS	T	D	20-20 ±3	80	0.5	60	Yes	80	0.002	B	21/8	Yes	Yes	Yes	3/3	1199.00
HITACHI	VT-1720A	VHS	T	M	20-20	70			Yes	80	0.005	B	14/4	No	Yes	Yes	3/3	799.00
	VT-1800A	VHS	T	M	20-20	70			Yes	80	0.005	B	365/8	Yes	Yes	Yes	3/3	999.00
INSTANT REPLAY	Image Translator 615 IT3	VHS	T	S	20-20	70	0.3	70	Yes	80	0.005	J	14/4	No	Yes	No	3/3†	1595.00; †Plus PAL & SECAM
	Image Translator 618 IT3	VHS	T	S	20-20	70	0.3	70	Yes	80	0.005	J	14/4	No	Yes	No	3/3†	1795.00
JVC	HR-D370	VHS	T	M	20-20				Yes	90	0.005 wrms	B	14/4	No	Yes	Yes	2/3	749.00
	HR-470	VHS	T	M	20-20				Yes	90	0.005 wrms	B	14/8	No	Yes	Yes	2/3	849.00
	HR-D566	VHS	T	M	20-20				Yes	80	0.005 wrms	B	14/8	Yes	Yes	Yes	2/3	899.00
	HR-D756	VHS	T	D	20-20				Yes	80	0.008 wrms	B	14/8	Yes	Yes	Yes	2/3	1295.00
	HR-S200	VHS	P	M	20-20				Yes	80	0.005 wrms	B	14/8	Yes	Yes	No	2/3	1195.00
KENWOOD	KV-917HF	VHS	T	M	20-20				Yes	80	0.008	B	14/8	Yes	Yes	Yes	2/3	1000.00
	KV-926HF	VHS	T	M	20-20				Yes	90	0.008	B	14/4	Yes	Yes	Yes	2/3	880.00
MAGNAVOX	VR9540	VHS	T	M	20-20	60	0.47		Yes	80	0.005	Yes	14/4	No	Yes	No	3/3	799.00
	VR9558	VHS	T	M	20-20	60	0.47		Yes	80	0.005	Yes	14/4	No	Yes	No	3/3	999.00
	VR9560	VHS	T	M	20-20	60	0.47		Yes	80	0.005	Yes	21/8	No	Yes	No	3/3	1199.00
	VR9565	VHS	T	M	20-20		0.47		Yes	80	0.005	Yes	21/8	Yes	Yes	No	3/3	1299.00

Hi-Fi VCRs

MANUFACTURER	Model	Format	Portable = P, Table Model = T	Standard Audio Tracks: Mono = M, Stereo = S, Stereo with Dolby NR = D	Frequency Response, Hz to kHz, ±dB	Audio S/N Ratio, –dB, re: 0 dB	THD, %	Separation, dB, at 1 kHz	Simulcast Recording?	Dynamic Range, dB	Wow & Flutter, Wtd. Peak, %	Stereo TV (MTS/SAP) Capability: Built Into Tuner = B, Decoder Jack = J	Programmability: Number of Days/Number of Events	Audio Dubbing?	Phone Jack?	Volume Control on Phone Jack?	Number of Tape Speeds, Record/Play	Price, $
MARANTZ	VR460	VHS	T	M	20-20	80	0.3		Yes	80		B	21/4	Yes	Yes	Yes	3/3	700.00
	VR465	VHS	T	M	20-20	80	0.3		Yes	80		B	21/4	Yes	Yes	Yes	3/3	800.00
	VR550	VHS	T	D	20-20	80	0.3		Yes	80		B	21/8	Yes	Yes	Yes	3/3	900.00
	VR560	VHS	T	D	20-20	80	0.3		Yes	80		B	21/8	Yes	Yes	Yes	3/3	1000.00
MINOLTA	MV-60	VHS	T	S	20-20	81			Yes	80	0.005	Yes	14/4	No	Yes	Yes	3/3	
MITSUBISHI	HS-411	VHS	T	M	20-20	90	0.3	60	No		0.005	B	14/8	No	No		3/3	680.00
	HS-421	VHS	T	M	20-20	90	0.3	60	Yes		0.005	B	14/8	No	Yes	Yes	3/3	850.00
NEC	N-965U	VHS	T	D	20-20		0.003	60	Yes	80	0.005	B	21/8	No	Yes	Yes	3/3	1149.00
	N-955U	VHS	T	D	20-20		0.003	60	Yes	80	0.005	B	21/4	No	Yes	Yes	3/3	899.00
PANASONIC	PV-1742	VHS	T		20-20	60			Yes		0.015	B	21/8	Yes	Yes	Yes	3/3	1250.00
	PV-1642	VHS	T		20-20	60			Yes		0.015	B	21/8	Yes	Yes	Yes	3/3	1000.00
	PV-9600A	VHS	P		20-20	60			Yes		0.015	B	14/8	Yes	Yes	No	3/3	1450.00
	PV-1564	VHS	T		20-20	60			Yes		0.015	J	14/4	Yes	Yes	Yes	3/3	850.00
PENTAX	PV-T150A	VHS	T	M	20-20				Yes	80	0.005	B	14/4	No	Yes	Yes	3/3	
PIONEER	VH-900	VHS	T		20-20				Yes	80	0.005	B	14/4				3/3	1099.00
	VX-90	Beta	T	M	20-20				Yes	80	0.005	B	21/8	Yes	Yes	Yes	2/3	1500.00
QUASAR	VH5665	VHS	T	S								B	21/8	No	No		3/3	1049.95
	VH5865	VHS	T	S								B	21/8	Yes	No		3/3	1289.95
	VP5757	VHS	P	S									14/8	Yes	No		3/3	979.95
RCA	VMT 670 HF	VHS	T		20-20				Yes	80		B	365/8	Yes	Yes	Yes	3/3	
	VMT 630 HF	VHS	T		20-20				Yes	80		B	365/4		Yes	Yes	3/3	
	VMT 595	VHS	T	D					Yes			B	365/4				3/3	
	VMT 395	VHS	T	D					Yes			B	365/4				3/3	
	VMT 295	VHS	T	D					Yes				14/2				3/3	
REALISTIC	41 (16-611)	VHS	T	D	20-20	80			Yes	80		B	14/5	Yes			3/3	599.95
SANSUI	SV-R9700HF	VHS	T	S	20-20		0.005		Yes	80	0.005	B	14/8	Yes	No	No	2/3	1100.00
	SV-R9500HF	VHS	T	S	20-20		0.005		Yes	80	0.008	B	14/4	Yes	No	No	2/3	900.00
SANYO	VHR1900	VHS	T	M	20-20	65	0.005	69.8	Yes	80	0.005	B	14/8	No	Yes	Yes	3/3	749.95
	VHR2900	VHS	T	D	20-20	65	0.005	67.5	Yes	80	0.005	B	365/8	No	Yes	Yes	3/3	719.95
SCOTT	SVR-504S	VHS	T	M	20-20 +0,-3	80	0.05	45	Yes	80	0.005	B	14/8	Yes	Yes	No	2/3	849.95
	SVR-330S	VHS	T	M	20-20 +0,-3	80	0.05	45	Yes	80	0.005	B	14/4	Yes	Yes	No	2/3	749.95
SHARP	VC-H64U	VHS	T	S		64		45	Yes	80		J	14/4	Yes	No	No	3/3	699.95
	VC-H65U	VHS	T	S		65		45	Yes	80		B	14/6	Yes	No	No	3/3	819.95
SONY	SL-HF450	Beta	T	S	20-20 +0,-3				Yes	80	0.005	B	7/6	No	Yes	Yes	2/3	750.00
	SL-HFT7	Beta	T	S	20-20 +0,-3				Yes	80	0.005	B	7/6	No	Yes	Yes	2/3	1000.00
	SL-HF750	Beta	T	S	20-20 +0,-3				Yes	80	0.005	B	21/8	No	Yes	Yes	3/3	1300.00
	SL-HF1000	Beta	T	S	20-20 +0,-3				Yes	80	0.005	B	21/8	Yes	Yes	Yes	3/3	1700.00
STRELIOFF	DXD 1	VHS	T	S	15-17.5 ±2	80	0.01	80	Yes	86	0.01	B	14/4	Yes	Yes	No	3/3	2500.00
SYLVANIA	VC8970	VHS	T	M	20-20	60	0.47		Yes	80	0.005	Yes	21/8	No	Yes	No	3/3	1199.00
TEAC	MV-900	VHS	T	S	20-20	95	0.005		Yes	90	0.008	B	14/8	Yes	Yes		2/3	
	MV-600	VHS	T	S	20-20	95	0.005		Yes	90	0.008	B	14/4	Yes	Yes	Yes	2/3	
TOSHIBA	M5900	VHS	T	M	20-20 +0,-2	74	0.1	60	Yes	90	0.005	B	7/4	Yes	Yes	Yes	2/3	1095.00
	DX-7	VHS	T	M	20-20 +0,-2	74	0.1	60	Yes	90	0.005	B	7/4	No	Yes	Yes	2/3	
VECTOR RESEARCH	V-4020	VHS	T	M	20-20 ±2	90	0.5	65	Yes	90	0.005	B	21/4	No	Yes	Yes	3/3	749.95
	V-4040	VHS	T	M	20-20 ±2	90	0.5	65	Yes	90	0.005	B	21/4	No	Yes	Yes	3/3	849.95
	V-5000	VHS	T	M	20-20 ±2	90	0.5	65	Yes	90	0.005	B	21/8	No	Yes	Yes	3/3	999.95
	V-5040	VHS	T	D	20-20 ±2	90	0.05	65	Yes	90	0.005	B	21/8	No	Yes	Yes	3/3	1099.95
YAMAHA	YV1000	VHS	T	M	20-20 +0,-3	80	0.015	60	Yes	80	0.005	B	14/8	Yes	Yes	Yes	2/2	999.00
ZENITH	VR2200	VHS	T		20-20		0.8	60		80	0.008	B	14/4				2/3	
	VR3200	VHS	T		20-20	70		60		80	0.008	B	14/8	Yes			2/3	
	VR4100	VHS	T	D	20-20			60		80	0.008	B	14/8	Yes			2/3	
	VR5100	VHS	P		20-20			60		80	0.008 wrms	B	14/8	Yes			2/3	

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Allen Edelstein, Stereophile, vol. 9, #5, August 1986

Line Drive

"For those who want a really high-quality preamplifier for CD playback, the clever folks at The Mod Squad have introduced their Line Drive. It has proven to be an excellent performer. Its sound is very neutral and clean, with an open transparent quality, a nice preservation of depth, and good, stable imaging. The unit is extremely quiet and does not degrade the S/N ratio of even the most expensive CD player."
Bert Whyte, Audio Magazine, June 1986

"Line-level-only preamps have been enjoying something of a renaissance. The Mod Squad has joined the fray with a smart model called the Line Drive System Control Center and it sports the immaculate finish we've learned to expect from things which emanate from the fertile mind of Steve McCormack."
Ken Kessler, Hi-Fi News & Record Review, August 1986

Tiptoes

"The use of Tiptoes will increase the clarity, inner resolution and detail, and dynamic range of almost any audiophile system."
$ensible Sound

"The large Tiptoes, placed under loudspeakers, offer a truly dramatic improvement in sound quality, not merely a subtle difference."
Audio Magazine

CUSTOMER LETTERS, 1986

■ *"I am writing to give you some positive feedback on your Line Drive. I was just amazed by the increase in clarity it provides. The best single investment I have made in my system—a dramatic improvement, not just incremental."*

■ *"I have just received my modified Mission DAD 7000R and want to pass my impressions on to you. The high end is more natural and lifelike, the upper midrange is smoother, and the greatest improvement is in the bass. Overall [the modification] makes a great difference. (P.S. In all my contacts over the phone, your people were helpful, courteous, patient and professional—a pleasure to deal with.)"*

■ *"Wow! I could hardly believe what a difference your damper made in my Sony CD player. It sounds so much smoother and more natural. I've never spent so little money and heard so much improvement. Thank you for a really great product."*

■ *"My purpose in writing to you is to thank you. Not for the quality of work which goes without saying, but instead for the professional yet personal nature in which you conduct your business. Because of the attitude of each and every person, an aura of trust, professionalism, competence and care is immediately apparent. You provide me with a valuable example for my own business."*

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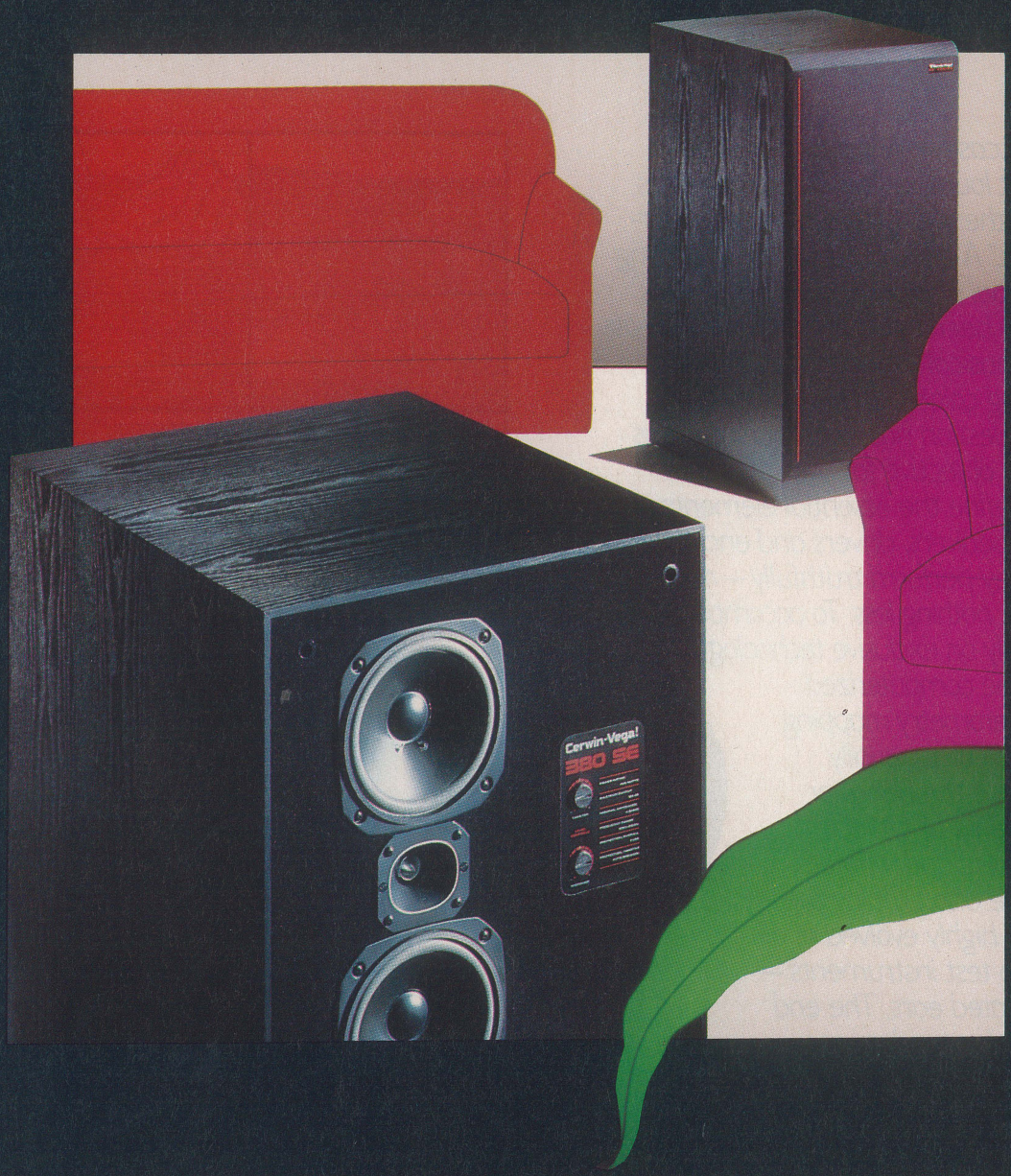
LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
AAL	D2500	Vented	6½			2½	Horn		65-22	91.5	5	2k	8/4	9 x 12 x 7	Wal. Vinyl	Black Cloth	12	260.00 Pair
	D8500	Vented	15	5	Cone	1	Dome		37-22	98.5	5	2k,5k	8/4	18 x 30 x 14	Wal. Vinyl	Black Cloth	63	980.00 Pair
	D3500	Vented	8			2½	Piezo Horn		60-20 ±3	94.5	5	3k	8/4	19 x 11 x 8	Wal. Vinyl	Brown Knit	38 Pair	169.95
	D4500	Vented	10	5	Cone	2½	Piezo Horn		45-22 ±3	95.5	5	2.7k,6k	8/4	24 x 15 x 10	Wal. Vinyl	Brown Knit	34	249.95
	D5500	Vented	12	5	Cone	2½,3	Piezo Horn, Cone		43-22 ±3	96.5	5	1.7k,6k, 15k	8/4	27 x 16 x 10	Wal. Vinyl	Brown Knit	40	349.95
	D9500	Vented	12	(2)5	Cones	2½,3	Piezo Horn, Cone		32-22 ±3	99.5	5	2k,6k,15k	8/4	39 x 16 x 15	Wal. Vinyl	Brown Knit	76	499.95
ACCULAB	550	Pas. Rad., Vented	(2)12	3⅝	Cone	2½, 2¾			30-25	92.5	5	48,1.5k, 7.5k,10k	8/5	15 x 11 x 40	Wal. Vinyl	Black Knit	54	319.00
	450	Ac. Sus.	12	3⅝	Cone	2½, 2¾			32-25	92.5	5	1.5k,7.5k, 10k	8/	15 x 11 x 32	Wal. Vinyl	Black Knit	45	249.00
	350A	Ac. Sus.	12	3⅝	Cone	2½			36-18.5	92	5	1.5k,10k	8/5	14 x 11 x 26	Wal. Vinyl	Black Knit	39	199.00
	330	Ac. Sus.	10	3⅝	Cone	2¾			40-18.5	91	5	2k,10k	8/5	13 x 11 x 22	Wal. Vinyl	Black Knit	28	149.00
	230	Ac. Sus.	8	3⅝	Cone	2¾			50-18.5	90	5	2.5k,10k	8/5	11 x 7 x 21	Wal. Vinyl	Black Knit	20	119.00
ACCURA	Pedestal Bass	Inf. Baf. Subwoof.	(2)8					W	26-180 ±2	89	50		4/4	28 x 12 x 11	Opt.	Black Cloth	37	895.00 Pair w/Xover
ACOUSTAT	One	ES Sat. & Subwoof.	10					T	30-18 ±3		75	160	4/3	Three Pieces	Opt.	Opt.	180 Sys.	1299.00 Sys.
	One + One	ES						T	30-20 ±2		70		4/3	93 x 11 x 4	Opt.	Opt.	144 Pair	1599.00 Pair
	Three	ES						T	30-20 ±2		70		4/3	72 x 28 x 4	Opt.	Opt.	196 Pair	1999.00 Pair
	Two + Two	ES						T	28-20 ±2		50		4/3	94 x 20 x 4	Opt.	Opt.	200 Pair	2399.00 Pair
	Six	ES						T	26-20 ±2				6/3	94 x 28 x 4	Opt.	Opt.	340 Pair	4249.00 Pair
	Eight	ES						T	24-20 ±2				6/3	94 x 36 x 4	Opt.	Opt.	440 Pair	5299.00 Pair
ACOUSTIC ELECTRONICS	AQ200D	Powered Slot Loaded Subwoof.	12						25-100 ±1.5		200 Inc.	100		17 Dia. x 21	Black Alum.	Opt., Knit	50	1195.00
ACOUSTIC INTERFACE	Angstrom	Ac. Sus.	6½			1	Dome		78-20 ±2.5	90	15	5k	8/6	13 x 7 x 6	Black Enam.	Black Cloth	10	110.00
	Tremor	Vented Subwoof.	2(12)					M,T	29-200 ±2.5	95	15	100	8/6	62 x 26 x 16	Oiled Wal.	Black Cloth	150	1090.00
	Shadow	Ac. Sus.	8			1	Dome		69-20 ±2.5	91	15	5k	8/6	25 x 9 x 9	Black Cloth	Black Cloth	18	145.00
	Intimate	Ac. Sus.	10			1	Dome	T	49-20 ±2.5	93	15	5k	8/6	19 x 12 x 12	Oiled Oak	Black Cloth	29	245.00
	Transcendant	Vented	12	1¼	Dome	1¼	Dome	M,T	38-20 ±2.5	94	15	1.9k	8/6	24 x 16 x 14	Oiled Wal.	Black Cloth	51	390.00
	Professional Series II	Vented	12	2	Dome	1	Dome	M,T	29-20 ±2.5	95	15	800,6.6k	8/6	36 x 16 x 19	Oiled Oak	Black Cloth	80	890.00
	Studio Reference	Vented	12	4x15	Horn	2x5½	Horn	M,T	22-20 ±2.5	98	15	880,5k	8/6	48 x 16 x 19	Oiled Wal.	Black Cloth	102	1590.00
	Sound Portal	Vented	24x32	7x19	Horn	5x6	Horn	M,T	15-20 ±2.5	101	15	800,5k	8/6	48 x 26 x 24	Oiled Oak	None	175	3500.00
	Sound Prism	Triamped, Vented	24x52	13x22	Horn	3x7¼	Horn	M,T	10-20 ±1	105	100, 300, 800, Inc.	550,5k	8/6	72 x 27 x 36	Oiled Wal.	None	1000 Pair	30,000. Pair
ADS	200-CC	Ac. Sus.	4			1	Dome		85-20 ±3	88	10	2.5k	4/3	7 x 4 x 5	Black Plas.	Black Steel	9 Pair	280.00 Pair
	300-CC	Ac. Sus.	5¼			1	Dome		65-20 ±3	89	10	2.5k	4/3.2	9 x 6 x 6	Black Plas.	Black Steel	14 Pair	370.00 Pair
	L300-W	Ac. Sus.	5¼			1	Dome		65-20 ±3	89	10	2.5k	4/3.2	9 x 6 x 7	Wal.	Black Steel	16 Pair	370.00 Pair
	L400	Ac. Sus.	7			1	Dome		60-20 ±3	90	10	2k	4/3.2	12 x 8 x 8	Opt., Wood	Black Steel	22 Pair	420.00 Pair
	L470	Ac. Sus.	7			1	Dome		50-20 ±3	88	15	2k	8/4.5	16 x 10 x 10	Opt.	Black Steel	37 Pair	340.00 Pair
	L570 Series 2	Ac. Sus.	8			1	Dome		46-20 ±3	88	15	1.8k	8/5	20 x 12 x 11	Opt.	Black Steel	50 Pair	460.00 Pair
	L780 Series 2	Ac. Sus.	8¼	1½	Dome	¾	Dome	T	42-27 ±3	88	15	650,5k	8/5	21 x 12 x 11	Opt.	Black Steel	64 Pair	680.00 Pair
	L880 Series 2	Ac. Sus.	10	2	Dome	¾	Dome	T	40-27 ±3	89	15	550,5k	8/4.5	23 x 13 x 12	Opt.	Black Steel	82 Pair	850.00 Pair
	L1090 Series 2	Ac. Sus.	(2)7½	2	Dome	¾	Dome	T	44-27 ±3	89	15	550,5k	8/5	37 x 10 x 11	Opt.	Black Steel	110 Pair	1100.00 Pair
	L1290 Series 2	Ac. Sus.	(2)8¼	2	Dome	¾	Dome	T	40-27 ±3	90	15	500,5k	8/5	42 x 11 x 12	Opt.	Black Steel	146 Pair	1400.00 Pair
	L1590 Series 2	Ac. Sus.	(2)10	2	Dome	¾	Dome	T	28-27 ±3	90	15	350,5k	8/5	47 x 12 x 14	Opt.	Opt.	206 Pair	2200.00 Pair
(Continued)	C400i	Inf. Baf.	6			1	Dome	T	42-20 ±3	91	5	1.6k	4/3.2	11 x 7 x 4	Opt.	Opt., Steel	5	

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
ADS (Continued)	300i/TR3	Inf. Baf.	5¼			1	Dome	T	50-20 ±3	90	5	2.5k	4/3.2	9 x 6 x 3	Opt.	Opt., Steel	3¾	
	300CC	Ac. Sus.	5¼			1	Dome		68-20 ±3	90	5	2.5k	4/3.2	9 x 6 x 6	Opt.	Steel	6¾	
	L200CC	Ac. Sus.	4			1	Dome		85-20 ±3	88	5	2.5k	4/3	7 x 4 x 5	Opt.	Steel	4½	
ADVANCED ELECTRO-DYNAMIC SYSTEMS	Archimedes	Pas. Rad.	9			2	Cyl.	ST	30-22 ±3	88	40	1.5k	8/3	14 x 14 x 34	Opt., Wood	Gray Knit	37	2195.00 Pair w/EQ
ADVENT	Legacy	Sealed	10			1	Dome		42-23 ±3	88			8/6	28 x 16 x 10	Pecan	Black Knit	93 Pair	399.95 Pair
	Maestro	Sealed	10	2½	Dome/ Cone	1	Dome		40-23 ±2.5	90				33 x 16 x 10	Pecan	Black Knit		699.95 Pair
	Baby	Sealed	6½			1¾	Cone		60-25 ±3	87	10		8/6	16 x 11 x 6	Pecan	Black Knit	26 Pair	199.95 Pair
	Prodigy	Sealed	8			¾	Dome		48-22 ±3	87	10		8/6	22 x 13 x 9	Pecan	Black Knit	44 Pair	299.95 Pair
AKAI	SW-A90	Pas. Rad.	10	4	Flat Diaph.	1	Flat Diaph.	T	30-40 ±3	90		1k,6k	8/	13 x 30 x 12	Wal.	Black Knit	33⅛	520.00 Pair
	SW-A70	Bass Ref.	12	1½	Dome	(2)⅜, ½	Domes	T	30-35 ±3	90		3k,8k,10k	8/	15 x 27 x 12	Opt., Wood	Black Knit	33⅛	460.00 Pair
	SR-LA502	Ac. Sus.	15	4	Cone	(2)3, 2¼	Cones		32-23 ±3	92			8/	18 x 36 x 13	Hick.	Brown Knit	48½	429.00 Pair
	SR-LA402	Pas. Rad.	12	4	Cone	2¼	Cone		32-20 ±3	90			8/	15 x 40 x 13	Hick.	Brown Knit	42¼	449.00 Pair
	SR-LA302	Ac. Sus.	12	4	Cone	2¼	Cone		36-20 ±3	90			8/	15 x 36 x 13	Hick.	Brown Knit	39⅝	349.00 Pair
	SR-LA202	Ac. Sus.	10	4	Cone	2¼	Cone		40-20 ±3	90			8/	13 x 30 x 11	Hick.	Brown Knit	27½	269.00 Pair
	SR-LA102	Ac. Sus.	8	4	Cone	2¼	Cone		45-20 ±3	90			8/	12 x 30 x 10	Hick.	Brown Knit	24⅜	229.00 Pair
	SW-M313	Ac. Sus.	6			2⅝	Cone		50-25 ±3	88			8/	9 x 14 x 7	Black Wood	Black Mesh	8⅞	210.00 Pair
	AE-S90	Pas. Rad.	4						60-15 ±3	88			8/	6 x 6 x 6	Black	Black Mesh	2¼	120.00 Pair
ALLISON ACOUSTICS	Ten	Ac. Sus.	(2)10	(4)3½	Cones	(4)1	Cones	M,T		87	30	350,3.75k	8/5.5	48 x 21 x 12	Opt.	Black Cloth	100	4500.00 Pair
	CD6	Ac. Sus.	8			1	Cone			87	15	2k	4/3.5	11 x 11 x 11	Opt., Wood	Opt., Plas.	17	195.00
	CD7	Ac. Sus.	8			1	Cone			87	15	2k	4/3.5	28 x 10 x 10	Opt., Wood	Opt., Plas.	22	250.00
	CD8	Ac. Sus.	8	3½	Cone	1	Cone	M,T		87	30	450,3.75k	4/3.5	29 x 11 x 11	Opt., Wood	Opt., Plas.	35½	395.00
	CD9	Ac. Sus.	10	3½	Cone	1	Cone	M,T		87	30	350,3.75k	4/3.5	37 x 13 x 11	Opt., Wood	Opt., Plas.	55½	550.00
	110	Ac. Sus.	8			1	Cone			87	15	2k	4/3.5	18 x 12 x 8	Wal. Vinyl	Black Plas.	16½	130.00
	120	Ac. Sus.	8			1	Cone			87	15	2k	4/3.5	22 x 14 x 8	Wal. Vinyl	Black Plas.	21¼	160.00
ALTA	Altamate	Ported	6½			1	Dome		45-22 ±3	89	20	3.2k	8/5	9 Dia. x 20	Opt.	Opt.	14	399.00 Pair
	7	Ported	8			1	Dome		35-22 ±2	91	20	2.7k	4/3	9 Dia. x 50	Opt.	Opt.	24	695.00 Pair
	6	Ported	8	4½	Cone	1	Dome		35-26 ±2	89	40	250,4.7k	4/3	9 Dia. x 60	Opt.	Opt.	27	995.00 Pair
	5	Ported	(2)8	(2)4½	Cones	1	Dome		28-26 ±2	91	50	250,4.7k	4/3	9 Dia. x 91	Opt.	Opt.	53	1595.00 Pair
	TMI	Ported	22,10, 6½	(2)3	Domes	1	Dome		22-26 ±1.5	89	70	65,325,6k	6/4	24 Dia. x 59	Opt.	Opt.	90	From 3995.00 Pair
ALTEC LANSING	101	Inf. Baf.	6½			1	Dome	No	50-22 ±3	91			6/	17 x 10 x 9	Oiled Wal.	Black Knit	39 Pair	170.00
	201	Inf. Baf.	8			1	Dome	No	45-22 ±3	92			6/	22 x 12 x 9	Oiled Wal.	Black Knit	43	250.00
	301	Inf. Baf.	10	2	Dome	1	Dome	No	38-22 ±3	92			8/	27 x 15 x 12	Oiled Wal.	Black Knit	47	375.00
	401	Inf. Baf.	12	2	Dome	1	Dome	No	35-22 ±3	93			8/	32 x 17 x 12	Oiled Wal.	Black Knit	60	480.00
	501	Inf. Baf.	(2)10	2	Dome	1	Dome	No	28-22 ±3	93			4/	46 x 12 x 14	Oiled Wal.	Black Knit	72	750.00
APATURE	R-86	Ported	8			¾	Dome		42-22	92	10	5k	8/8	12 x 12 x 22	Opt.	Brown Knit	30 Pair	239.95 Pair
	Pro-I	Trans. Line	10			2½	Cone		38-22	92	10	1.8k	8/4	11 x 12 x 33	Oak	Brown Knit	48 Pair	399.95 Pair
	SAT	Ac. Sus.	5¼			2x½	Ribbon		56-34	92	10	5.4k	8/8	8 x 8 x 12	Koa	Brown Knit	15 Pair	259.95 Pair
	BM	Ac. Sus. Subwoof.	(2)10						34-125	92	10	125	8/4	21 x 30 x 16	Koa	Brown Knit	65	339.95
	Trident	Sat. & Subwoof.	(2)10	(2)5¼	Cones	(2) 2x½	Ribbons		34-34	92	10	125,5.4k	8/4	Three Pieces	Koa	Brown Knit	100 Sys.	599.95 Sys.

DIMENSION REDEFINED.



Cerwin-Vega's new Select Edition Series.

Sonic realism that creates a new dimension.

These stunning speakers give you high-tech outside, and *inside*—where it counts most. We've combined exacting engineering standards with superior innovation to deliver defined, dimensional performance. All six models offer expertly matched componentry for clear linear response and electrifying depth.

Advances in consumer electronics demand progressive loudspeakers. With its unsurpassed efficiency (as high as 102dB 1W @ 1M) and power handling (up to 405 watts continuous), the SE Series delivers incomparable dynamic range (exceeding 92dB). Even at extraordinary output levels, reproduction remains remarkably defined and distortion free.

Finally, speakers that do justice to everything you've got—from compact discs to 8mm digital video playback.

For those who know a great thing when they hear it. And see it.

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Cerwin-Vega Europe: Skanderborgvej 71/DK-8680 Ry, Denmark

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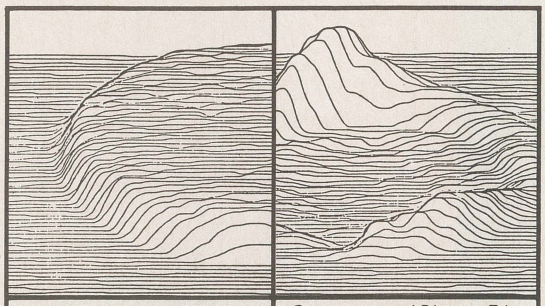
AT CELESTION, THE ENJOYMENT OF MUSIC IS THE ONLY STANDARD OF REFERENCE.

Occasionally genuine wisdom about loudspeaker design emerges from the yearly torrent of "speaker-speak." A general consensus regarding the goal of loudspeaker design has finally been achieved: to help recreate the musical sound stage without adding coloration or distortion.

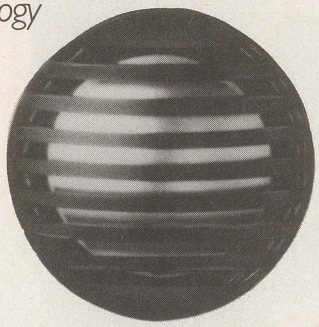
Celestion has been pursuing this same objective for over 60 years. We refine the essential elements in our speakers, drivers and enclosures, so they perform truthfully — nothing more, nothing less. To accomplish this, we rely on exclusive technology like the computerized interferometry mapping system that visually displays the behavior problems of typical tweeters and woofers.

We also employ the most highly evolved of all audio test instruments — educated ears. The end result is sound stage imaging which accurately conveys the dimension of the concert hall.



SL6S Treble Unit 8kHz. | Conventional Plastic Film Treble Unit 8kHz.

Celestion's computerized laser interferometry mapping system exposes imperfections in driver performances so we can eliminate them.



Our award-winning proprietary one-piece tweeter dome is designed to perform without physical, hence acoustical distortions.

Refinements incorporated in the new SL 6S include a lighter, more efficient aluminum tweeter, a redesigned woofer surround and a new, ultra-rigid bracing system for the low-mass enclosure.

Undeterred by the steady flow of self-serving buzz words and conflicting absolutes, Celestion continues its pursuit of the music with the new SL 6S. Like other Celestion loudspeakers, its lifelike performance shows that technology is only effective when it serves the demands of the music.

CELESTION

Kuniholm Drive, Box 521
Holliston, MA 01746
(617) 429-6706

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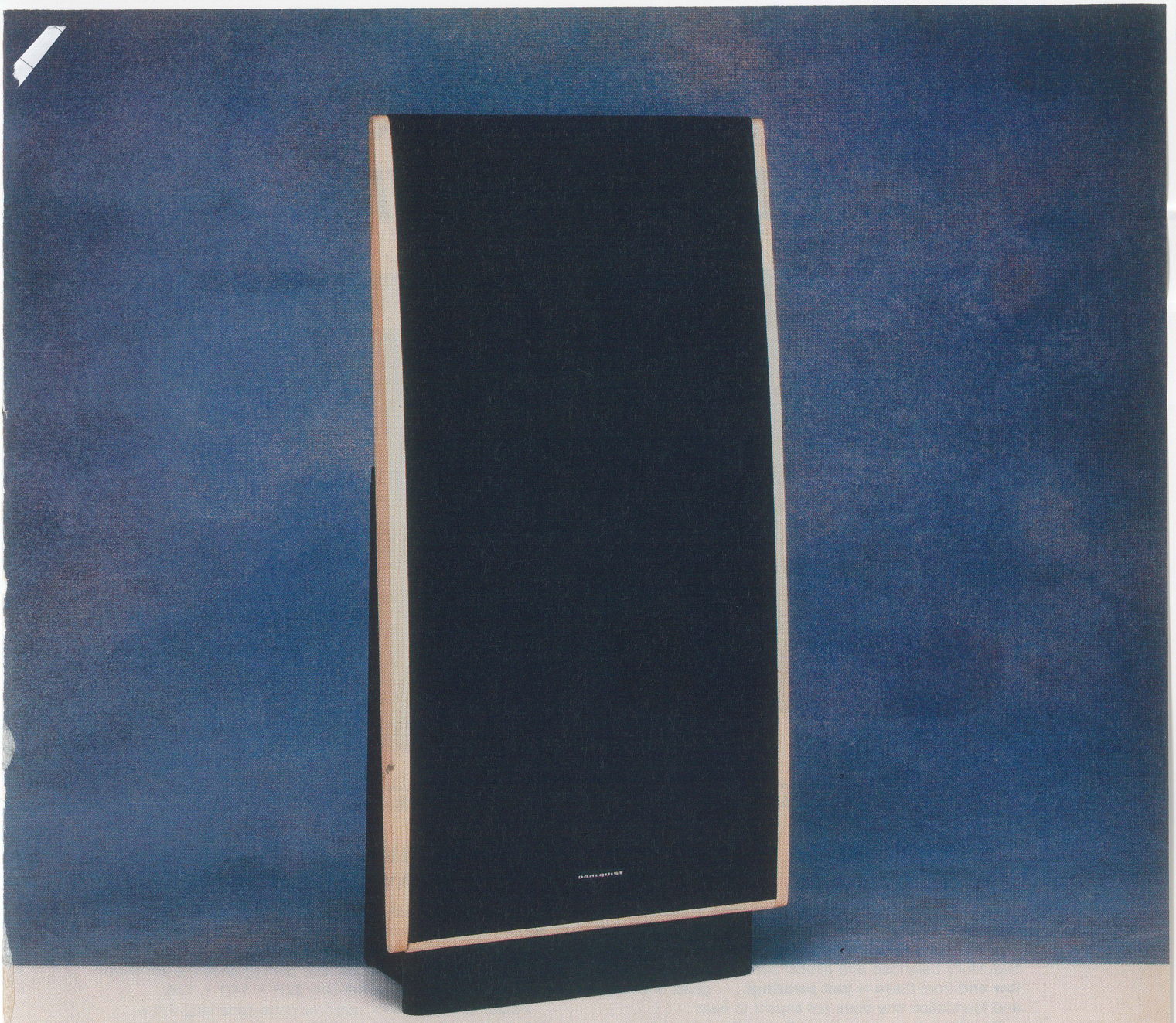
MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Supertweeter = ST	Anechoic Frequency Response, Hz to kHz, ± dB		SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
APOGEE ACOUSTICS	Scintilla	Ribbon Dipole	12x53	2x53	Ribbon	½x53	Ribbon		30-20		100	500,5k	1,4/	29 x 57 x 3	Suede Paint	Opt.	290 Pair	3780.00 Pair
	Apogee	Ribbon Dipole	12x76	2x76	Ribbon	½x76	Ribbon	T	30-20		Bi-Amp 100	400,3.5k	4/	35 x 80 x 3	Suede Paint	Opt.	600 Pair	8000.00 Pair
	Duetta	Ribbon Dipole	12x47			0.8x47	Ribbon	T	30-20	80	100	600	4/3	25 x 57 x 3	Suede Paint	Opt.	225 Pair	2580.00 Pair
	Caliper	Ribbon Dipole	12x37			0.8x37	Ribbon		30-20		100	600	4/3	24 x 48 x 2	Suede Paint	Opt.	140 Pair	1650.00 Pair
AR	MGC-1	Ac. Sus.	(2)8	6, (2),4, 1½	Cones	¾,1	Domes		35-32	85	50	200,1.1k, 3.5k,5.3k	4/3.2	52 x 26 x 16	Opt., Wood	Black	150	3600.00 Pair
	MGC-II	Ac. Sus.	12	(2)4, 6½	Cones	1	Dome		35-32	85	25	250,3.5k	4/3.2	44 x 17 x 12	Oiled Wal.	Black	80	2000.00 Pair
	9LSi	Ac. Sus.	12,10	8,1½	Cone, Dome	¾	Dome		28-32	84	15	200,1.1k, 7.5k	4/	51 x 16 x 14	Oiled Wal.	Black	120	1000.00
	98LSi	Ac. Sus.	12	8,1½	Dome, Cone	¾	Dome		39-32	84	15	200,1.1k, 7.5k	4/	29 x 15 x 9	Oiled Wal.	Black	63	625.00
	58BXi	Ac. Sus.	12	4	Cone	¾	Dome		39-32	85	15	800,5.2k	4/	30 x 13 x 10	Wal. Vinyl	Black	48	380.00
	48BXi	Ac. Sus.	10	4	Cone	¾	Dome		45-32	88	15	1k,5.5k	8/	27 x 13 x 9	Wal. Vinyl	Black	38	300.00
	38BXi	Ac. Sus.	8	4	Cone	¾	Dome		52-32	86	10	1.1k,5.1k	6/	22 x 13 x 7	Wal. Vinyl	Black	28	235.00
	28BXi	Ac. Sus.	10			1	Dome		42-22	89	10	1.8k	8/	27 x 13 x 10	Wal. Vinyl	Black	35	210.00
	25BXi	Ac. Sus.	8			1	Dome		49-22	87	10	3k	8/	20 x 10 x 8	Wal. Vinyl	Black	22	180.00
	18BXi	Ac. Sus.	8			1	Dome		52-22	87	10	3.2k	8/	17 x 10 x 8	Wal. Vinyl	Black	18	140.00
	8BXi	Ac. Sus.	6½			1	Cone/ Dome		64-25	88	10	4.5k	8/	15 x 9 x 7	Wal. Vinyl	Black	15	100.00
	1MS	Ac. Sus.	4		Cone	¾	Dome		95-25	85	10	2.8k	4/		Alum.	Black	4	130.00
	Powered Partners	Powered Ac. Sus.	4		Cone	1	Dome	W	50-25		Inc.		10k	6 x 10 x 7	Alum.	Black	7	339.95 Pair
	Rock Partners	Ac. Sus.	8		Cone	1¼	Cone		65-22	88	10	2k	8/	15 x 9 x 9	Black Vinyl	Black	15	249.95 Pair
	Connoisseur 19	Ac. Sus.	6½			1	Dome		65-22	88	10	5k	8/	16 x 10 x 7	Oiled Wal.	Black	15	160.00
	Connoisseur 20	Ac. Sus.	8			1	Dome		57-22	87	10	4k	6/	18 x 11 x 8	Oiled Wal.	Black	19	210.00
	Connoisseur 40	Ac. Sus.	10	6½	Cone	1	Dome		41-22	87	15	200,5k	6/	27 x 13 x 14	Oiled Wal.	Black	43	500.00
	Connoisseur 50	Ac. Sus.	12	6½	Cone	1	Dome		37-32	85	20	350,3.5k	4/	32 x 14 x 13	Oiled Wal.	Black	78	700.00
	Connoisseur Subwoofer	Ac. Sus. Subwoof.	(2)10						31-100	85	15	90	4/	16 x 31 x 18	Oiled Wal.	Black	70	500.00
ARC	CSII	Vented	(2)6½			1	Dome	No	43-20 ±3	92	10	2k	4/	12 Dia. x 22	Opt., Wood	Black Cloth	20	695.00 Pair
	CSA	Powered, Vented	(2)6½			1	Dome	No	32-20 ±2	92	Inc.	2k	4/	12 Dia. x 22	Opt., Wood	Black Cloth	30	1295.00 Pair
ATC	SCM50	Ported	9	3	Dome	1	Dome		40-20 ±6	85	50	400,4k	8/	28 x 16 x 12	Opt.	Black	85	3000.00 Pair
	SCM100	Ported	12	3	Dome	1	Dome		35-20 ±6	88	50	350,4k	8/	33 x 19 x 16	Opt.	Black	115	3800.00 Pair
	SCM50A	Ported, Active	9	3	Dome	1	Dome	M,T			350 Inc.	380,3.8k		28 x 16 x 12	Opt.	Black	95	5000.00 Pair
	SCM100A	Ported, Active	12	3	Dome	1	Dome	M,T			350 Inc.	380,3.8k		33 x 19 x 16	Opt.	Black	125	5800.00 Pair
AUDIO CONCEPTS	Mod C	Inf. Baf.	8			1	Dome		50-20 ±3	88	30	2k	8/6	19 x 12 x 10	Opt., Wood	Black Knit		Kit, 199.00 Pair
	Mod S	Aperiodic	6½			1	Dome		65-20 ±3	87	30	2.5k	8/6	16 x 10 x 8	Opt., Wood	Black Knit		Kit, 169.00 Pair
	Mod G	Aperiodic	10	4½	Cone	1	Dome		44-20 ±3	90	30	800,6k	8/6	28 x 14 x 13	Opt., Wood	Black Knit		Kit, 349.00 Pair
	Compact Monitor	Aperiodic	6½			1	Dome		48-20 ±3	87	30	2k	8/6	16 x 10 x 8	Opt., Wood	Black Knit		Kit, 325.00 Pair
	Vanguard	Aperiodic	8¾			1	Dome		45-20 ±3	89	30	2k	8/6	28 x 14 x 13	Opt., Wood	Black Knit		Kit, 489.00 Pair
	DII	Aperiodic	12	2	Dome	1	Dome		36-20 ±3	91	30	800,5k	8/6	36 x 17 x 16	Opt., Wood	Black Knit		Kit, 749.00 Pair
	Titan	Aperiodic	12	5¼	Cone	1	Dome		30-20 ±3	91	30	800,4.5k	8/6	36 x 17 x 16	Opt., Wood	Black Knit		Kit, 489.00 Pair
	Pulse	Push-Pull Compound Subwoof.	(2)10						35-600 ±3	91	30		4/3	18 x 14 x 17	Opt., Wood	Black Knit		Kit, 349.00 Pair
	Quartz T	Hybrid Trans. Line	6½	2	Dome	1	Dome		46-20 ±3	87	30	700,1.2k, 5k	8/6	36 x 13 x 12	Opt., Wood	Black Knit		Kit, 759.00 Pair
	JCRS Sub#1	Push-Pull Compound Subwoof.	(2)12						22-600 ±3	91	30		4/3	21 x 34 x 20	Opt., Wood	Black Knit		Kit, 539.00 Pair

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Superweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
AUDIO PRO	B1-45	Powered Subwoof.	10						30-200 ±1.5	102	Inc.	Var.		15 x 15 x 20	Opt.		48	795.00
	B2-70	Powered Subwoof.	(2)8						20-200 ±1.5	103	Inc.	Var.		24 x 20 x 17	Opt.	Black Cloth	91	1295.00
	B2-100	Powered Subwoof.	(2)8						20-200 ±1.5	104	Inc.	Var.		36 x 20 x 17	Opt., Wood	Black Cloth	156	1495.00
	B4-200	Powered Subwoof.	(4)8						20-200 ±1.5	110	Inc.	Var.		44 x 21 x 21	Black	Black Cloth	190	2995.00
	A4-14MKII	Powered	(2)5	4½	Cone	1	Dome		30-20	113	Inc.	300,2.5k		20 x 12 x 10	Opt.	Black Foam	98 Pair	1895.00 Pair
	3-40	Pas. Rad.	(2)8			1	Dome		43-20	92	25	2.5k		24 x 12 x 11	Opt.	Black Foam	55 Pair	549.00 Pair
AUDIO PULSE	825	Bass Ref.	8			1¾	Cone		45-20 ±3	89	5	5k	6/4	12 x 23 x 10			20	200.00 Pair
	835	Bass Ref.	8	4½	Cone	1¾	Cone		40-20 ±3	90	10	2k,7k	6/4	12 x 23 x 9			23	300.00 Pair
	1035	Bass Ref.	10	4½	Cone	1¾	Cone		35-20 ±3	90	15	2k,5k	6/4	14 x 24 x 9			25	400.00 Pair
	1235	Bass Ref.	12	4½	Cone	1¾	Cone		30-20 ±3	91	15	2k,5k	6/4	14 x 26 x 11			30	500.00 Pair
	1535	Ac. Sus.	15	4½	Cone	1¾	Cone		30-20 ±3	92	15	1.5k,5k	6/4	17 x 32 x 15			65	750.00 Pair
	800TM	Pas. Rad.	8	4½	Cone	1¾	Cone		35-20 ±3	94	5	2k,7k	6/4	13 x 32 x 9	Hick. Vinyl	Black	25	520.00 Pair
	1200TM	Pas. Rad.	12	4½	Cone	1¾	Cone		30-20 ±3	96	5	2k,5k	6/4	14 x 38 x 11	Hick. Vinyl	Black	37	700.00 Pair
	500DM	Bass Ref.	12	4½	Cone	3	Cone		35-20 ±3	96	10	2k,5k	8/4	14 x 26 x 12	Wal. Vinyl	Black	30	450.00 Pair
	1000DM	Pas. Rad.	10	4½	Cone	3	Cone		32-20 ±3	97	15	2k,5k	8/4	13 x 37 x 12	Wal. Vinyl	Black	40	560.00 Pair
	1500DM	Pas. Rad.	12	4½	Cone	3	Cone		28-22 ±3	98	20	1.2k,5k	8/4	14 x 40 x 11	Wal. Vinyl	Black	43	700.00 Pair
AUDIOSOURCE	LS-One	Inf. Baf.	4			1	Dome		76-20	87	10	2.5k	8/	8 x 5 x 5	Wal. Ven.	Black Knit	3½	199.00 Pair
	LS-Seven	Inf. Baf.	6½			1	Dome		70-20	87	10	2k	8/	†4 x 9 x 7	Oak Ven.	Black Knit	7	259.95 Pair
	LS-Nine	Inf. Baf.	8			1	Cone		65-20	88	10	3.5k	8/	18 x 11 x 8	Oak Ven.	Black Knit	13½	319.95 Pair
	LS-Ten	Inf. Baf.	4			1	Cone		120-20	88	5	9k	8/	8 x 5 x 5	Wal. Ven.	Black Knit	3¼	119.95 Pair
AUDIRE	Image I	Ribbon							30-20 ±3	96	25	None	4/4	72 x 42 x 3	Oiled Wal.	Black Knit	150	6500.00 Pair
	Image II	Ribbon							35-20 ±3	93	50	None	6/6	72 x 36 x 3	Oiled Wal.	Black Knit	125	4500.00 Pair
	Image III	Ribbon							40-20 ±3	90	75	None	8/8	60 x 24 x 3	Oiled Oak	Brown Knit	60	2500.00 Pair
BABB AUDIO	C14	Ac. Sus.	5¼	5¼	Cone	5¼	Ribbon	No	60-18 ±3	92	15		4/4	11 x 7 x 6	Black	Black Metal	21 Pair	320.00 Pair
BANG & OLUFSEN	RL 60.2	Bass Ref.	(2)5			1	Dome	No	42-20 +4,-8	93	10	25k	8/	21 x 16 x 7	Gray Plast.	Black	24	225.00
	RL 140	Bass Ref.	(2)6½	5	Cone	1	Dome	No	40-20 +4,-8	93	10	800,3k	8/	28 x 20 x 9	Gray Plast.	Black	43	375.00
	S80.2	Ac. Sus.	8		Dome	1	Dome	No	50-22	92	20	700,2.5k	8/	12 x 21 x 10	Rswd.	Black	24	299.00
	CX 50	Ac. Sus.	4			1	Dome	No	80-20	89	20	2.5k	6/	4 x 8 x 8	Alum.	Black	8	99.00
	CX 100	Ac. Sus.	(2)4			1	Dome	No	50-20	89	10	2.5k	6/	4 x 12 x 8	Black	Black	13½	149.00
	Beolab Penta	Powered Bass Ref.	(4)5	(4)3¼	Cones	1	Dome	W	40-20	92	150 Inc.	700,5k	8/	(5)5⅜ x 65H	Alum. Steel	Black	53	2600.00 Pair
BECKER ELECTRONICS	PRO 200	Ported	8			3	Cone		70-19 ±3	89	5	3.5k		11 x 9 x 19	Wal. Vinyl	Black Knit	30 Pair	89.00
	PRO 300	Ported	8	5	Cone	3	Cone		65-19 ±3	90	10	4.9k,9k	8/6	12 x 9 x 23	Wal. Vinyl	Black Knit	38 Pair	109.00
	PRO 500	Ported	12	5	Cone	3	Cone		55-19 ±3	91	10	2k,6k	8/6	11 x 11 x 24	Wal. Vinyl	Black Knit	21	169.00
	PRO 600	Ported	15	5	Cone	3	Cone		50-19 ±3	91	15	4.9k,9k	8/6	18 x 13 x 29	Wal. Vinyl	Black Knit	48	219.00
	101A	Tuned Port	8			1	Dome		70-20 ±3	90	5	4.5k	6/4	19 x 11 x 8	Wal. Vinyl	Black Knit	31 Pair	119.00
	505A	Tuned Port	10	5	Cone	1	Dome		50-20 ±3	90	15	2.4k,5k	4/3.5	24 x 13 x 10	Wal. Vinyl	Black Knit	28	189.00
	606A	Tuned Port	12	5	Cone	1	Dome	T	50-20 ±3	91	15	2.4k,5k	4/3.5	30 x 15 x 10	Wal. Vinyl	Black Knit	37	239.00
	707A	Tuned Port	(2)10	5	Cone	1	Horn	T	60-20 ±3	92	10	1k,9k	4/4	36 x 13 x 12	Wal. Vinyl	Black Knit	51	299.00
BECKER-SWAN	Pyramid	Pas. Rad.	6			1	Horn		50-25	92	10		4/4	17 x 10.x 10	Opt., Fbgls.	Black Metal	15	299.00 Pair
B.E.S.	SM300	Puls. Diaphr.						M,T	30-22 ±3	93	25	500,5k, 10k	8/5.5	22 x 54 x 7	Oiled Oak	Brown	79	1500.00 Pair w/EQ
	SM275	Puls. Diaphr.						M,T	32-22 ±3	93	10	500,10k	8/5.5	20 x 40 x 6	Oiled Oak	Brown	58	990.00 Pair w/EQ

(Continued)



STATEMENT OF THE ART

Creating a truly musical loudspeaker is indeed an art—as much a product of mind, hands and heart as a painting or a piano sonata.

And, as in painting, there are different styles to this art. For example, there are Impressionistic speakers, where detail and focus are subordinated to a pursuit of atmosphere. Speakers that impose their vision of what we ought to hear through psycho-acoustic tricks can be thought of as Expressionistic. We at Dahlquist confess to being realists.

Realism is what the new DQ-20 Phased Array™ is all about. We believe that the ultimate realization of the loudspeaker art must not express or suppress, only reveal—easily, naturally and transparently—the music that flows through it.

Realism means music that retains its substance and form—with precise, stable imaging and open, airy, in-depth presentation of each individual instrument. It means human voices that are natural, with no artificial colorations to get in the way of true communication of content or emotion. The DQ-20 leaves music free—to touch and to move the listener.

Please take the opportunity soon to audition a pair of DQ-20 loudspeakers and hear for yourself that, at Dahlquist, the state-of-the-art is art that lets music make the statement.

DAHLQUIST

601 Old Willets Path, Hauppauge, N.Y. 11788

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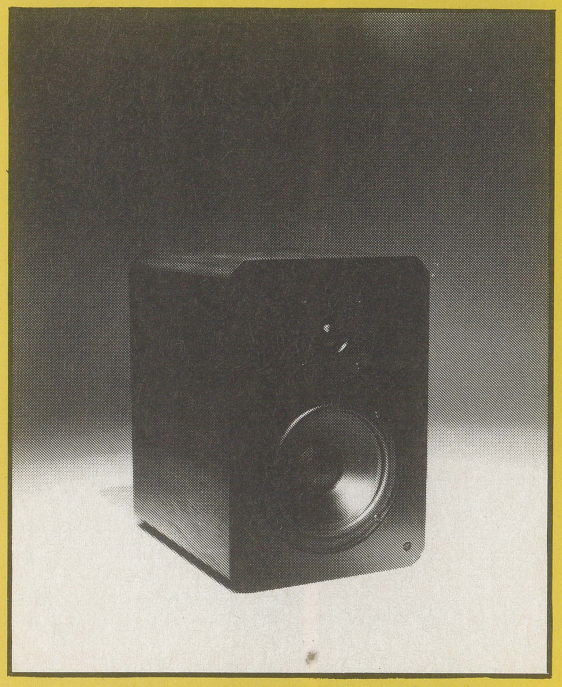
"...The Most Successful Design of All"



MAXIM III 2-WAY SPEAKER SYSTEM

MAGNUM III 3-WAY SPEAKER SYSTEM

J. GORDON HOLT
STEREOPHILE JULY, 1985

Mr. Holt elaborates: "of all the speakers in this price class that I have heard, I would say that Siefert's Maxim is probably **the most successful design of all** . . . The system is beautifully balanced and almost perfectly neutral . . . **the low end** from these is **just amazing!** . . . gives a solidarity and foundation one does not expect to hear . . .

They have the **most accurate middle range I have heard** from any speaker . . . it has one of the **best extreme-top ranges I have heard** from a dynamic system . . . **the imaging and soundstage** presentation from these **are excellent.**

They do not sound small . . . it can make most audiophiles (and practically all music lovers) quite happy . . . **RECOMMENDED."**

The Maxim III's, whose 40-Hz resonance is unmatched anywhere for a 2-way ported system only 13H × 11D × 9W, are optimized for lowest group delay and intermodulation distortion. Natural hardwood finishes are walnut, oak, or black lacquer.

SUBWOOFER / 100-Hz ACTIVE CROSSOVER

Coming soon for use with Maxim III. 12-inch long-throw driver. Complete with 100-Hz, 3rd-order unique **phase-matched** active crossover. Provides mono-summed **bridged outputs.** Equalized for **19 Hz** (-3dB). $499.00/set.

INTRODUCING...
...THE 3-WAY MAGNUM III

The new 3-way MAGNUM III is the big brother to the Maxim III. Its similar design goals of extremely-low group-delay response, low intermodulation distortion, optimized imaging, and impressive low-end performance are achieved in a modestly-sized cabinet only 22H × 14D × 13W.

Featured are: an 8-in. polypropylene-cone long-throw (16 mm) woofer. A tuned-reflex cabinet-wall port extends response to **36 Hz** (-3 dB). A new 4-in. long-throw polypropylene midrange driver provides over **6 octaves** of smooth, wide-dispersion response.

A unique new 1-in. **aluminum**-dome/polyamide-surround tweeter exhibits unrivalled smoothness to 32 KHz. **3rd-order** crossover networks at **250 Hz** and 3 KHz minimize driver overlap. Mirror-imaged cabinets are finished in walnut, oak, or black lacquered natural hardwood.

SEND FOR A REPRINT

. . . of the entire *Stereophile* review along with complete specifications of the Maxim III and new Magnum III. Join hundreds of satisfied customers, buy the Maxim III's factory-direct for $399 plus $14 UPS or Magnum III for $699 plus $36 UPS, with 30-day, satisfaction-guaranteed return privilege.

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MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
B.E.S. (Continued)	SM90	Puls. Diaphr.							42-19 ±3	88	5	800	8/5.5	19 x 28 x 4	Anod. Alum.	Brown Nylon	20	600.00 Pair w/EQ
	SM100	Puls. Diaphr.							42-19 ±3	88	5	800	8/5.5	19 x 28 x 4	Vinyl	Brown	26	499.00 Pair w/EQ
	SM80	Puls. Diaphr.							60-19 ±3	88	5	1.5k	8/5.5	15 x 24 x 4	Vinyl	Brown	21	369.00 Pair w/EQ
BEVERIDGE SPEAKERS	SYS-5	Ported	(2)12				ES	No	30-18 ±5		50	200	8/3	18 Dia. x 63	Opt.	Black Foam	80	3900.00 Pair
	SYS-6	Ported	(2)12				ES	No	30-18 ±5		100	200	8/3	23 Dia. x 90	Opt.	Black Foam	100	6500.00 Pair
	SYS-6S	Ported	(2)12				ES	No	30-18 ±5		100	200	8/3	23 Dia. x 79	Opt.	Black Foam	100	6500.00 Pair
BGR	BGR-40	Bass Ref.	(2)8			1	Dome		40-20 ±3	91	15	2.5k	6/4	29 x 11 x 14	Opt., Plas. Lam.	Black Knit	39	739.00 Pair
	BGR-80	Ac. Sus. Sat. & Subwoof.	13	6½	Cone	1	Dome		38-20 ±3	90	25	150,2.5k	8/6	Three Pieces	Oak	Black Knit	82 Sys.	979.00 Sys.
	BGR-10	Ac. Sus.	6½			1	Dome		50-20	89	15	2.5k	8/6	12 x 8 x 7	Rswd. Vinyl	Black Knit	12	279.00 Pair
	BGR-25	Ac. Sus.	8			1	Dome		45-20	90	15	2.5k	8/6	18 x 11 x 9	Wal. Vinyl	Black Knit	14	299.00 Pair
	BGR-30	Ac. Sus.	10			1	Dome		42-20	90	15	2.1k	8/6	25 x 14 x 11	Wal. Vinyl	Black Knit	33	389.00 Pair
	BGR-55A	Bass Ref.	12	2	Dome	1	Dome		40-20	90	15	700,3k	8/6	25 x 14 x 12	Opt., Wood	Black Knit	42	689.00 Pair
	BGR-60	Bass Ref.	10	2	Dome	1	Dome		38-22 ±3	90	15	700,3k	8/6	25 x 14 x 12	Opt., Wood	Black Knit	40	699.00 Pair
	BGR-70	Bass Ref.	13	5½	Cone	1	Dome		33-22 ±3	91	20	600,3k	8/6	32 x 15 x 14	Wal. Vinyl	Black Knit	52	859.00 Pair
	BGR-70A	Ac. Sus.	13	5½	Cone	1	Dome		33-22 ±3	90	25	600,3k	8/5	37 x 14 x 12	Oak	Black Knit	63	1100.00 Pair
BOSE	901 V	Ac. Matrix	(9)4½								10		8/	21 x 13 x 13	Wal.	Cloth	17½	1485.00 Pair w/EQ
	601 III	Ported	(2)8			(4)3	Cones			87	10	1.5k,2.5k	8/	12 x 12 x 30	Wal.	Brown Knit	45	1026.00 Pair
	501 IV	Ported	10			(2)3	Cones				20	1.5k,2.5k	8/	16 x 14 x 25	Teak	Brown	20	750.00 Pair
	301 II	Ported	8			(2)3	Cones				10	1.5k,2.5k	8/	10 x 17 x 10	Wal.	Brown Knit	19	422.00 Pair
	201 II	Ported	6			3	Cone				5	1.5k,2.5k	8/	15 x 8 x 9	Rswd.	Brown Knit	10	254.00 Pair
	101 Music Monitor	Ported	4½							89	10		8/	6 x 9 x 5	Opt.	Opt.	10	From 199.00 Pair
	RoomMate System	Powered	4½								Inc.			6 x 9 x 5	Opt.	Opt.	10 Pair	229.00 Pair
	Video RoomMate System	Powered	4½								Inc.			6 x 9 x 5	Gray	Silv.	10 Pair	279.00 Pair
	10.2	Ported	(2)8			(2)3	Cones			88	10	1.2k,3k, 4k	4/3.2	12 x 12 x 40	Waxed Teak	Brown Knit	61	1199.00 Pair
	8.2	Ported	10			(2)3	Cones			86	10	1.2k,2.8k	4/	16 x 9 x 33	Teak Vinyl	Brown Knit	41	949.00 Pair
	6.2	Ported	8			(2)3	Cones				10	2.2k,6k	4/	20 x 10 x 10	Teak	Brown Knit	19½	599.00 Pair; 658.00 Pair w/ Stands
	4.2	Ported	8			2½	Cone				10	2.2k	8/	18 x 10 x 9	Teak Vinyl	Brown Knit	15	419.00 Pair
BOSTON ACOUSTICS	T1000	Ac. Sus.	(2)8	6½	Cone	1	Dome		38-25 ±3	90	15	400,3k	8/6	43 x 10 x 12	Opt., Wood	Gray	65	1200.00 Pair
	T830	Ac. Sus.	8	3½	Cone	1	Dome		45-20 ±3	90	15	600,3k	8/6	29 x 10 x 11	Wood Vinyl	Gray	40	450.00 Pair
	A400	Ac. Sus.	(2)8	6½	Cone	1	Dome		38-25 ±3	88	15	300,3k	4/4	41 x 21 x 7	Opt., Wood	Opt., Cloth	58	900.00 Pair
	A150 Series II	Ac. Sus.	10	3½	Cone	1	Dome		38-25 ±3	90	15	650,3k	8/5	33 x 16 x 8	Opt.	Opt., Cloth	47	600.00 Pair
	A100 Series II	Ac. Sus.	10			1	Dome		38-25 ±3	90	15	2k	8/5	33 x 16 x 8	Wood Vinyl	Black Cloth	44	390.00 Pair
	A70	Ac. Sus.	8			1	Dome		40-25 ±3	90	15	2k	6/4.5	24 x 14 x 8	Wood Vinyl	Black Cloth	26	300.00 Pair
	A60 Series II	Ac. Sus.	8			1	Dome		52-20 ±3	90	10	3k	8/6	18 x 11 x 8	Opt.	Opt., Cloth	16	220.00 Pair
	A40 Series II	Ac. Sus.	6½			¾	Cone		65-20 ±3	89	5	3.5k	8/5	14 x 8 x 7	Opt.	Opt., Cloth	9	160.00 Pair
	A40V Series II	Ac. Sus.	6½			¾	Cone		68-20 ±3	88.5	5	3.5k	8/5	14 x 8 x 7	Black Vinyl	Black Cloth	9	180.00 Pair

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ± dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
BOZAK	DMS 2000	Ducted Port	8			1	Dome		45-20 ±3	92	10	2.5k	8/6	20 x 10 x 8	Opt., Wood	Black Knit	20	119.50
	DMS 2500	Ducted Port	8			1	Dome		35-21 ±2.5	90	10	2.5k	8/6	22 x 11 x 9	Opt., Wood	Black Knit	30	199.50
	DMS 3000	Ducted Port	8	2	Cone	1	Dome		35-21 ±2.5	90	10	2.5k,13k	8/6	37 x 11 x 9	Opt., Wood	Black Knit	33	259.50
	DMS 3500	Ducted Port	8	4	Cone	1	Dome		35-21 ±2.5	92	10	800,4k	8/6	37 x 11 x 9	Opt., Wood	Black Knit	40	329.50
	DMS 4500	Ducted Port	12	4	Cone	1	Dome		30-21 ±3	95	10	800,2.5k	8/6	27 x 16 x 10	Opt., Wood	Black Knit	50	369.50
	DMS 5500	Inf. Baf.	12	6	Cone	1	Dome		30-21 ±3	94	10	400,2.5k	8/6	41 x 16 x 11	Opt., Wood	Black Knit	70	449.50
	DMS 5500W	Inf. Baf.	12	6	Cone	1	Dome		28-21 ±2.5	94	20	400,2.5k	8/6	41 x 16 x 12	Oak	Black Knit	80	569.50
	DMS 6000	Inf. Baf.	12	6	Cone	1,2	Dome, Cone		28-21 ±2.5	94	20	400,2.5k, 13k	8/6	41 x 16 x 12	Oak	Black Knit	81	669.50
	DMS 7000	Inf. Baf.	(2)12	6	Cone	(8)2, (2)1	Cones, Domes		20-21 ±2.5	95	50	400,2.5k, 13k	8/6	66 x 17 x 16	Oak	Black Knit	200	1499.50
	MSS-1000	Ducted Port			Cone		Cone		20-20 ±3	86	30	80,2k	8/5	Three Pieces	Opt.	Black Knit	78 Sys.	999.00 Sys.
	CS 400	Inf. Baf.	12	6	Cone	(2)2	Cones		35-18 ±3	93	25	800,2.5k	8/6	18 x 13 x 26	Wal. Ven.	White	65	499.50
	CS 501	Inf. Baf.	12	6	Cone	(3)2	Cones		28-18 ±3	93	35	400,2.5k	8/6	20 x 16 x 32	Wal. Ven.	White	90	779.50
	CS 4000A	Inf. Baf.	(2)12	6	Cone	(8)2	Cones		25-20 ±3	94	50	400,2.5k	8/6	26 x 16 x 45	Wal. Ven.	White	180	1299.50
	CS 310B	Inf. Baf.	(4)12	(2)6	Cones	(8)2	Cones		20-20 ±3	95	50	400,2.5k	8/6	36 x 19 x 52	Wal. Ven.	White	300	2099.50
	B-1000	Inf. Baf.	8						50-10	90	10		8/6	18 x 18 x 12	Alum.	Gold Mesh	20	229.50
	B-1002	Inf. Baf.	8			2	Cone		50-20	90	10	4k	8/6	18 x 18 x 12	Alum.	Gold Mesh	21	269.50
BSC	Compusound 150	Powered Inf. Baf.	(2)8	5¼	Cone	1	Dome	W,M, T	15-20 ±2	90	Inc.	195,2.2k		Three Pieces	Oiled Oak	Opt., Knit	300 Sys.	3600.00 Sys.
	Compusound 100	Inf. Baf.	(4)5¼	5¼	Cone	1		W,T	30-20 ±2	92	50	2k	8/6	Three Pieces	Opt.	Opt., Knit	150 Sys.	1295.00 Sys.
	Compusound SW-100	Powered Inf. Baf. Subwoof.	(2)10					W	15-100 ±3	95	Inc.	100		24 x 11 x 16	Opt.	Opt., Knit	90	695.00 w/Amp
BSM	Series 3 MKIV	Bass Ref.	8	3	Cone	2	Cone		48-20	92	15	2k,6k	8/4	24 x 11 x 8	Black Wood	Black Knit	16	
	Series 4 MKIV	Bass Ref.	10	3	Cone	2	Cone		40-20	92	15	2k,6k	8/4	24 x 14 x 10	Black Wood	Black Knit	18½	
	Series 7 MKIV	Bass Ref.	12	4	Cone	2	Cone		30-20	94	15	2k,6k	8/4	27 x 15 x 11	Black Wood	Black Knit	28½	
	Series 12 MKI	Pas. Rad.	12	4	Cone	2	Cone		30-20	94	15	2k,6k	8/4	41 x 15 x 11	Black Wood	Black Knit	37	
B & W	Matrix 1	Ac. Sus.	6			1	Dome		80-25 ±2	85	25		4/4	16 x 9 x 12	Opt., Wood	Opt., Knit	22	998.00 Pair
	Matrix 2	Ac. Sus.	8			1	Dome		80-25 ±2	87	25		4/4	23 x 10 x 12	Opt., Wood	Opt., Knit	35	1398.00 Pair
	Matrix 3	Ac. Sus.	(2)8			1	Dome		70-25 ±2	90	25		4/4	36 x 10 x 16	Opt., Wood	Opt., Knit	64	1998.00 Pair
	John Bowers Active 1	Active	(2)6			1	Dome	M,T	45-18 ±2		Inc.			34 x 16 x 10	Opt., Wood	Opt., Knit	66	3394.00 Pair
	DM 100	Ac. Sus.	6			1	Dome		80-20 ±3	89	10	3k	8/6.4	15 x 9 x 8	Opt.	Opt., Knit	12	258.00 Pair
	DM 110	Bass Ref.	8			1	Dome		70-20 ±3	90	10	3k	8/6.4	19 x 10 x 10	Opt.	Opt., Knit	19	378.00 Pair
	DM 220	Ac. Sus.	(2)8			1	Dome		53-20 ±3	90	10	3k	8/6.4	27 x 12 x 13	Opt.	Opt., Knit	33	578.00 Pair
	DM 330	Ac. Sus.	(2)8			1	Dome		48-20 ±3	91	10	3k	8/6.4	34 x 12 x 13	Opt.	Opt., Knit	37½	738.00 Pair
	VM 1	Bass Ref.	8			1	Dome		70-20 ±3	90	5	3k	8/6.4	19 x 10 x 10	Opt.	Gray Knit	19	398.00 Pair
	VM 2	Ac. Sus.	(2)8			1	Dome		53-20 ±3	90	7	3k	8/6.4	27 x 12 x 13	Opt.	Gray Knit	33	598.00 Pair
	DM 1200	Ac. Sus.	6			1	Dome		85-20 ±2	85	30	3k	8/6.4	14 x 9 x 11	Opt., Wood	Opt., Knit	21	770.00 Pair
	DM 17 LTD	Ac. Sus.	6			1	Dome		85-20 ±2	85	40	3k	8/6.4	16 x 9 x 11	Opt., Wood	Opt., Knit	20	900.00 Pair
	802FS	Ac. Sus.	(2)6½	4	Cone	1	Dome	M,T	55-20 ±2	85	100	400,3k	8/6.4	41 x 12 x 15	Opt., Wood	Opt., Knit	70	2500.00 Pair
	801FS	Ac. Sus.	10½	4	Cone	1	Dome	M,T	45-20 ±2	85	100	400,3k	8/6.4	38 x 17 x 22	Opt., Wood	Opt., Knit	103	3500.00 Pair
	808	Bass Ref. & Trans. Line	(2)10½	(2)4	Cones	1½	Dome	M,T	30-20 ±2	91	100	400,3k	8/6.4	44 x 26 x 21	Opt., Wood	Opt., Knit	180	7500.00 Pair
	LM1	Ac. Sus.	4			¾	Dome		95-25 ±4	81	20	3k or 4.5k	8/6.4	9 x 6 x 8	Opt.	Opt., Wire	12	538.00 Pair
CABASSE	Brigantin V	Ac. Sus.	14	6,2	Domes	1	Dome		40-20 ±3	94	10	180,1k, 5.5k	8/	57 x 17 x 19	Wal.	Black Knit	165	5600.00 Pair
	Galion V	Ac. Sus.	11.8	6,2	Domes	1	Dome		50-20 ±3	94	10	150,1.2k, 5k	8/	39 x 14 x 13	Wal.	Black Knit	73	2900.00 Pair
	Caravelle	Ac. Sus. Biamp	8	2	Dome	1	Dome		60-20 ±3	93	10	700,5k		26 x 12 x 11	Wal.	Black Knit	39.6	1400.00 Pair
	Corvette	Ac. Sus. Biamp	6	2	Dome	1	Dome		65-20 ±3	92	10	700,5k		19 x 10 x 10	Wal.	Black Knit	22	1275.00 Pair
	Galiote	Ac. Sus. Biamp	6			1	Dome		70-20 ±4	93.5	10	4k	8/	11 x 8 x 8	Wal.	Black Knit	13.2	900.00 Pair

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LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
CADAWAS ACOUSTICS	TC-1	Auto Damping	8,10	5¼	Cone	1,2	Dome, Cone	M,T		87	25	250,3.5k, 8k	8/6.5	24 x 15 x 11	Oiled Wal.	Brown Cloth	44	1195.00 Pair
	Mobile Monitor One	Auto Damping	(2)5¼			1	Dome	T		87	15	2.5k	8/	14 x 8 x 8	Oiled Wal.	Brown Cloth	15	595.00 Pair
	TC-2	Auto Damping Subwoof.	8,10					W	20-125	87	25	125	8/	24 x 15 x 11	Oiled Wal.	Brown Cloth	40	650.00 Pair
CAMBER ACOUSTICS	.5	Ported	8			¾	Dome		55-20 ±3	90	10	3.5k	8/3	22 x 10 x 11	Opt., Vinyl	Black Knit	22	199.00 Pair
	1.5	Ported	6½			¾	Dome		55-20 ±3	89	10	3.5k	8/3	16 x 10 x 11	Opt., Vinyl	Black Knit	19	329.00 Pair
	2.5	Ported	6½			1	Dome		45-20 ±2	90	10	3k	8/3	24 x 10 x 11	Opt., Vinyl	Black Knit	24	435.00 Pair
	3.5	Ported	8			1	Dome		43-20 ±2	91	15	3k	8/3	24 x 10 x 13	Opt., Vinyl	Black Knit	30	599.00 Pair
	4.5	Ported	8			1	Dome		40-20 ±2	90	15	3k	8/3	23 x 10 x 12	Opt.	Black Knit	35	1099.00 Pair
	Studio-Pro	Ported	(2)8	8	Cone	1	Dome		35-20 ±2	90	25	200,3.5k	8/3	41 x 11 x 15	Opt.	Black Knit	85	1950.00 Pair
CANTON	CA 10	Triamped Motional Feedback	10	4½	Cone	1	Dome	W,M, T	20-30		Inc.	350,3.5k		14 x 25 x 14	Opt.	Opt., Black	90	4000.00 Pair
	CA 20	Quad-Amped Motional Feedback	(2)10, 7½	1½	Dome	1	Dome	(2)W, M,T	20-30		Inc.	220,1k, 4.5k		14 x 49 x 16	Opt.	Opt., Black	188	8000.00 Pair
	CA 30	Quad-Amped Motional Feedback	(4)10, 7½	1½	Dome	1	Dome	(2)W, M,T	20-30		Inc.	220,1k, 4.5k		15 x 67 x 17	Opt.	Opt., Black	250	12,000. Pair
	Karat 100	Ac. Sus.	8	1¼	Dome	¾	Dome		36-30	90		900,3.6k	8/	9 x 14 x 9	Opt.	Opt.	14	550.00 Pair
	Karat 200	Ac. Sus.	9	1¼	Dome	¾	Dome		28-30	90		900,3.6k	8/	11 x 17 x 10	Opt.	Opt.	20	725.00 Pair
	Karat 300	Ac. Sus.	10	1½	Dome	1	Dome		25-30	91		850,4.2k	8/	12 x 20 x 12	Opt.	Opt.	31	900.00 Pair
	CT 800	Ac. Sus.	10	4½	Cone	1	Dome		22-30	93		450,3k	4/	14 x 23 x 13	Opt.	Opt.	39	1200.00 Pair
	CT 1000	Ac. Sus.	12	4½	Cone	1	Dome		20-30	90		450,3.1k	4/	26 x 38 x 13	Opt.	Opt.	44	1500.00 Pair
	Plus S	Ac. Sus.	4			1	Dome		45-30 ±6	87		2.2k	4/	8 x 5 x 4	Opt.	Opt.	5	275.00 Pair
	GL 260	Ac. Sus.	6			1	Dome		42-30 ±6	87		1.7k	4/	10 x 7 x 5	Opt.	Opt.	7½	375.00 Pair
	GL 300F	Ac. Sus.	6			1	Dome		48-30 ±6	87		1.7k	4/	13 x 9 x 3	Opt.	Opt.	7½	400.00 Pair
	HC 100	Ac. Sus.	4			1	Dome		48-30 ±6	87		1.7k	4/	8 x 5 x 6	Opt.	Opt.	5	275.00 Pair
	Plus C	Subwoof.	12						22-120 ±6	90			4/	14 x 14 x 14	Opt.	Opt.	26	500.00
	Plus Beta	Biamped Subwoof.	12					W	20-140 ±6	95		70,90, 140		15 x 14 x 15	Opt.	Opt.	49	1500.00
	Fonum 30	Ac. Sus.	7	1¼	Dome	¾	Dome		36-30	89		900,4.5k	8/	13 x 9 x 8	Black Vinyl	Opt.	10½	389.00 Pair
	Fonum 60	Ac. Sus.	8	1¼	Dome	¾	Dome		28-30	90		900,4.5k	8/	15 x 10 x 9	Black Vinyl	Opt.	12	479.00 Pair
	Fonum 90	Ac. Sus.	9	1¼	Dome	1	Dome		25-30	90		900,4.5k	8/	17 x 12 x 10	Black Vinyl	Opt.	17	569.00 Pair
	Fonum 150	Ac. Sus.	8½	2	Dome	1	Dome		25-30	91		800,3.5k	8/	20 x 12 x 11	Black Vinyl	Opt.	28	699.00 Pair
	Fonum 200	Ac. Sus.	10	2	Dome	1	Dome		22-30	91.5		800,3.5k	8/	22 x 14 x 13	Black Vinyl	Opt.	36	899.00 Pair
	CT 2000	Vented	12	4½	Cone	1	Dome		18-30	95		450,3k	4/	14 x 39 x 13	Opt.	Opt.	76	2300.00 Pair
	Ergo P	Ac. Sus.	(2)10	4½	Cone	1	Dome		20-30	94		450,3.1k	4/	12 x 39 x 12	Opt.	Opt.	57	2400.00 Pair
CARVER	Amazing	Ribbon Panel	(4)10				Ribbon		24-32 ±3	90	100	125	5/	66 x 30 x 2	Black	Gray	160	1500.00 Pair
CASCADE	Questor I	Vented	7			¾	Dome		32-20 ±4.5	90	25	2.8k	6/2.7	31 x 13 x 13	Black Oak	Black Knit	47	1198.00 Pair
	Questor II	Vented	7			1	Dome		26-20 ±4.5	91.5	25	2.5k	6/2.7	32 x 24 x 17	Black Oak	Black Knit	66	1858.00 Pair
CASTLE ACOUSTICS	Trent	Bass Ref.	5			1¼	Cone	No	70-22	89	10		8/6	13 x 7 x 8	Opt., Ven.	Black Foam	16½ Pair	250.00 Pair
	Clyde	Bass Ref.	5			1¼	Cone	No	65-22	89	10		8/6	15 x 9 x 9	Opt., Ven.	Black Foam	19½ Pair	295.00 Pair
	Tyne	Bass Ref.	6			1¼	Cone	No	55-22	89	10		8/6	18 x 10 x 9	Opt., Ven.	Black Foam	28 Pair	375.00 Pair
	Durham	Bass Ref.	6			1¼	Cone	No	60-22	88	10		8/6	16 x 9 x 9	Opt., Ven.	Black Foam	26 Pair	495.00 Pair
	Pembroke	Bass Ref.	8			1¼	Cone	No	48-22	88	10		8/6	22 x 10 x 12	Opt., Ven.	Black Foam	50 Pair	625.00 Pair
	Stirling	Bass Ref.	(2)6			1¼	Dome	No	48-22	88	10		8/6	22 x 10 x 13	Opt., Ven.	Black Foam	50 Pair	995.00 Pair

HOW YOUR ROOM LOOKS TO YOUR SOUND SYSTEM.

AND WHY YOU NEED AN ADC SOUND SHAPER.

"My stereo doesn't sound the same at home as it did in the store! How come?"

It's usually not the fault of your system. Chances are, your components are excellent. But...

EVERY LISTENING ROOM, IN EVERY HOME, IS DIFFERENT.

Every room has its own pattern of reflective and absorptive surfaces.

Carpets and drapes swallow up sound. Walls and windows bounce it around. Speaker placement can dramatically amplify certain frequencies and diminish others.

As the result, some of Stanley Clarke's bass notes seem to "boom" unnaturally. The full-throated Rob McConnell brass section sounds uncharacteristically off-mic. Some piccolo passages in the *Firebird Suite* could drill a hole in your ear.

WHAT'S THE CURE?

Simple. ADC Sound Shapers let you adjust or "equalize" the sound output of your stereo system to help compensate for the acoustic peculiarities of your room.

Quickly and easily, octave by octave, from 20 to 20,000 Hz, the sliders help you fine-tune your room to achieve the smooth frequency response your music system is capable of delivering. And to achieve the sound balance that satisfies your own musical taste.

A display of lights shows you what the room "hears," the adjustments you make, and the adjusted frequency levels of the music as it is being played.

10 SOUNDSHAPERS 10.

We have four EQs with real-time analyzers and pink-noise generators, like the SS-412X shown at the top of the photo.

There's an equalizer with spatial expander, too: the SS-117EX, pictured in the middle. You'll hear the dramatic difference when you switch in the expander, to spread the stereo image.

Our brand-new 12-band SS-525X offers precision, computerized equalization—automatically; narrow-band bass settings; EQ memories with electronic call; and remote. The slim-line SS-100SL has an RTA for even greater value.

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LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
CDE	Mini Monitor IV	Inf. Baf.		5½	Cone	1	Dome		50-20	91	50	1.5k	/4	7 x 11 x 9	Lacq. Teak	Black Knit	12	450.00 Pair
	Mini Monitor V	Inf. Baf.		5½	Cone	1	Dome		50-32	91	50	1.5k	/4	15 x 6 x 9	Lacq. Teak	Black Knit	14	650.00 Pair
	Tower I	Pas. Rad.	8		Cone	1	Dome		40-20	91	75	200,1.5k	/8	8 x 37 x 12	Lacq. Teak	Black Knit	43	1500.00 Pair
	Mini Tower Double Subwoofer	Inf. Baf. Sat. & Ported Subwoof.	8	5½	Cone	1	Dome		22-32	91	200	150,1.5k	/4, 16/	Four Pieces	Lacq. Teak	Black Knit	172 Sys.	3500.00 Sys.
	Colossus Tower Subwoofer	Sat. & Ported Subwoof.	(2)8, (6)10	6½	Cone	1	Dome		15-32	91	200	65,300, 1.5k	16/, 12/	Four Pieces	Lacq. Teak	Black Knit	1100 Sys.	30,000. Sys.
CELESTION	System 6000	Subwoof.	(4)12					W	20-100		100	100		18 x 15 x 21	Black	Black Knit	86	3300.00 Pair w/EQ
	SL600	Ac. Sus.	6			1¼	Dome		60-20 ±0.5	82	60	2.3k	8/6	15 x 8 x 10	Alum. Nxtl.	None	11	1630.00 Pair
	SL6S	Ac. Sus.	6			1¼	Dome		60-20 ±1	84	60	2.8k	8/6	15 x 8 x 10	Opt., Wood	Opt., Cloth	18½	900.00 Pair
	DL10	Ported	10	6½	Cone	1¼	Dome		35-20 ±6	90	10	530,3.8k	8/6	29 x 14 x 12	Wal. Vinyl	Brown Cloth	42	900.00 Pair
	DL8	Ac. Sus.	8			1¼	Dome		39-20 ±6	89	10	2.5k	8/6	20 x 11 x 11	Opt., Vinyl	Opt., Cloth	22	550.00 Pair
	DL6	Ported	8			1	Dome		50-20 ±6	89	10	2.5k	8/6	18 x 10 x 10	Opt., Vinyl	Opt., Cloth	17	440.00 Pair
	DL4	Ported	6½			1	Dome		70-20 ±6	89	10	2.5k	8/6	15 x 8 x 9	Opt., Vinyl	Opt., Cloth	12	375.00 Pair
CERWIN-VEGA	D-1	Ported	8			1	Horn		30-20 ±4	92	5	3k	8/5	20 x 11 x 10	Vinyl	Brown Knit	25	155.00
	D-2	Ported	10			1	Horn		30-20 ±4	94	5	3k	8/5	24 x 14 x 10	Vinyl	Brown Knit	35½	205.00
	D-3	Ported	10	6	Cone	1	Horn	T	30-20 ±4	94	5	700,3.5k	8/5	27 x 14 x 11	Vinyl	Brown Knit	39	265.00
	D-5	Ported	12	6	Cone	1	Horn	T	32-20 ±4	96	5	700,3.5k	8/5	28 x 16 x 11	Vinyl	Brown Knit	44	315.00
	D-7	Ported	12	(2)6	Cones	1	Horn	M,T	25-20 ±4	98	5	500,3.5k	8/5	28 x 16 x 11	Vinyl	Brown Knit	70	395.00
	D-9	Ported	15	(2)6	Cones	1	Horn	M,T	29-20 ±4	101	5	500,3.5k	4/4	36 x 18 x 18	Vinyl	Brown Knit	85	475.00
	2000-10	Ported	10	(2)6	Cones	1	Dome	M,T	29-20 ±2.5	94	5	250,3.5k	8/4	34 x 16 x 11	Wal.	Black Knit	55	400.00
	2000-12	Ported	12	(4)6	Cones	1	Dome	M,T	25-20 ±2.5	98	5	250,3.5k	8/4	47 x 17 x 13	Wal.	Black Knit	83	550.00
	2000-15	Ported	15	(6)6	Cones	1	Dome	M,T	29-20 ±2.5	100	5	250,3.5k	8/4	50 x 24 x 13	Wal.	Black Knit	116	700.00
	240SE	Ported	10			1	Dhorm		32-20 ±3	95	5	3k	6/4	25 x 13 x 12	Black Vinyl	Black Knit	36	235.00
	250SE	Ported	10	6	Cone	1	Dhorm	M,T	32-20 ±3	95	5	550,3.5k	6/4	28 x 13 x 12	Black Vinyl	Black Knit	41	300.00
	280SE	Ported	12	6	Cone	1	Dhorm	M,T	32-20 ±3	96	5	550,3.5k	6/4	26 x 15 x 12	Black Vinyl	Black Knit	44	345.00
	300SE	Ported	12	7	Cone	1	Dhorm	M,T	25-20 ±3	98	5	250,3.5k	6/4	32 x 15 x 16	Black Vinyl	Black Knit	65	450.00
	380SE	Ported	15	(2)7	Cones	1	Dhorm	M,T	29-20 ±3	102	5	250,3.5k	6/4	36 x 18 x 19	Black Vinyl	Black Knit	90	540.00
CHAPMAN	T-4	Air Sus.	8			1	Dome		40-20 ±3	88	25	3k	4/3	23 x 11 x 8	Oiled Oak	Black Knit	35	760.00 Pair
	T-7	Air Sus.	10	5	Cone	1	Dome		32-20 ±3	87	50	200,3k	4/3	39 x 13 x 10	Oiled Oak	Black Knit	70	1495.00 Pair
	T-9	Air Sus.	(2)10	6½,5	Cones	1	Dome		25-20 ±3	88	50	150,1k,3k	2/1.5	45 x 22 x 14	Oiled Oak	Black Knit	150	3300.00 Pair
CSI	MDM-4	Ported	(2)6½			3½	Cone		60-17 ±3	89	15	1.5k	8/5	19 x 13 x 10	Rswd. Lam.	Brown Cloth	50 Pair	990.00 Pair
	MDM-TA2	Time Align	6½			¾	Dome	T	60-20 ±3	87	15	2.5k	8/5	16 x 12 x 9	Rswd. Lam.	Alum.	40 Pair	1090.00 Pair
	MDM-TA3	Time Align	(2)6½	3½	Cone	¾	Dome	M,T	45-20 ±3	91	15	1.8k,7k	8/4	19 x 16 x 12	Rswd. Lam.	None	70 Pair	1390.00 Pair
	BE-32	Powered ELF	(2)8						20-60 ±1	91	Inc.	70		32 x 12 x 19	Black Lam.	Black Cloth	160 Pair	2450.00 Pair
DAHLQUIST	DQ-20	Inf. Baf. Phased Array	10	5	Cone	¾	Dome	No			70	200,3.5k	4/	42 x 22 x 12	Oak	Opt.	60	1800.00 Pair
	DQM-9	Tuned Port	11	5	Cone	1	Dome		28-22	95	25	450,3.5k	8/6	14 x 25 x 13	Opt.	Black	65	1200.00 Pair
	DQM-9 Compact	Tuned Port	9	5	Cone	1	Dome		35-22	92	25	450,3.5k	8/6	14 x 22 x 11	Opt.	Black	55	980.00 Pair
	DQM-7 Compact	Tuned Port	9			1	Dome		37-22	90	25	3k	8/6	13 x 21 x 11	Opt.	Black	50	730.00 Pair
	DQM-5	Tuned Port	9			1	Dome		37-22	90	25	3k	8/6	12 x 21 x 11	Opt.	Black	46	600.00 Pair
	DQM-3	Ac. Sus.	8			1	Dome		50-20	89	20	2k	8/6	11 x 18 x 10	Opt.	Black	35	450.00 Pair
	DQ-10	Inf. Baf. Phased Array	10	5,½	Cone, Dome	¾,¼	Dome, Piezo	T,ST	40-27 ±3	86	60	400,1k, 5k,12.5k	8/5	31 x 32 x 9	Opt., Wood	Opt.	55	1200.00 Pair
	DQ-1W	Inf. Baf. Subwoof.	13						20-100	87	60		8/	26 x 19 x 15	Opt., Wood	Opt.	70	395.00

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
DALI	2	Air Sus.	6½			1	Dome		60-20 ±3	89	10	2.5k	8/	14 x 9 x 9	Wal. Ven.	Black Knit	16	275.00 Pair
	3	Air Sus.	8			1	Dome		55-20 ±3	90	5	2.5k	8/	17 x 11 x 9	Wal. Ven.	Black Knit	21	340.00 Pair
	4	Air Sus.	(2)8			1	Dome		55-20 ±3	93	5	2.5k	4/	30 x 12 x 9	Wal. Ven.	Black Knit	40	480.00 Pair
	6	Air Sus.	10,8			1¼	Dome		40-20 ±3	91	10	2.5k	6/	37 x 11 x 12	Wal. Ven.	Black Knit	55	790.00 Pair
	7	Bass Ref.	10	3	Dome	¾	Dome		35-20 ±3	89	20	900,3k	8/	37 x 11 x 12	Wal. Ven.	Black Knit	55	900.00 Pair
	8	Bass Ref.	(2)8	4¼	Cone	1⅜,¾	Dome, Cone		33-23 ±3	92	10	1k,3k,8k	8/	38 x 12 x 16	Wal. Ven.	Black Knit	81	1300.00 Pair
DAYTON WRIGHT	LCM-1A	Gas Sus.	7			1,¾	Dome		38-16	88	30	4.3k	5/4	22 x 11 x 14	Black Knit	Black Knit	25	625.00 Pair
	LCM-1	Gas Sus.	7			1	Dome		38-16	88	30	4.3k	5/4	22 x 11 x 14	Black Knit	Black Knit	25	550.00 Pair
	SM-2	Gas Sus.	7	1	Dome	⅝	Dome	M,T		89	40	4.3k,11k	5/4	22 x 11 x 14	Black Knit	Black Knit	28	749.00 Pair
	XAM-4	Gas Sus.	10	6	Cone	⅝,1	Domes	T		90	40	100,4.3k, 11k	5/4	48 x 11 x 16	Black Knit	Black Knit	82	1325.00 Pair
	ICBM-1	Gas Sus. Subwoof.	(2)10						20-100 ±3	90	30	100	5/4	48 x 11 x 26	Vinyl	Black Knit	95	1249.00 Pair
	XG-10II System H	ES & Gas Sus. Subwoof.	10	5x18	ES	½x2	EMT	T	20-20 ±4	86	100	38,3.5k	5/4		Opt., Wood	Opt.	310 Sys.	5300.00 Sys.
	XG-10II System C	ES & Gas Sus. Subwoof.	(2)10	5x18	ES	½x2	EMT	T	16-20 ±4	86	100	38,3.5k	5/4		Opt., Wood	Opt.	360 Sys.	5600.00 Sys.
dB PLUS	440	Bass Ref.	6½			1	Dome		45-22 ±3	94	10	3k	8/4	10 x 16 x 9	Wal. Vinyl	Black Knit	16	350.00 Pair
	800	Bass Ref.	10			1	Dome		35-22 ±3	96	10	2.2k	8/4	12 x 24 x 12	Wal. Vinyl	Black Knit	29	450.00 Pair
	990	Pas. Rad.	10			1	Dome		30-22 ±3	98	10	2.2k	8/4	12 x 33 x 11	Wal. Vinyl	Black Knit	37	550.00 Pair
	1010	Bass Ref.	(2)10			1	Dome		25-22 ±3	100	10	2k	8/4	12 x 37 x 11	Wal. Vinyl	Black Knit	45	700.00 Pair
	dB+ 25B	Passive Electr.	5¼			1¾	Dome		50-20 ±3	87	10	4.5k	4/4	12 x 7 x 7	Black Vinyl	Black	10	179.00 Pair
	dB+ 50MKII	Ported	8			1	Dome		45-22 ±3	90	15	2.2k	6/4	24 x 12 x 10	Wal.	Black	28	339.00 Pair
	dB+ 100MKII	Ported	10			1	Dome		40-22 ±3	91	15	2k	6/4	25 x 14 x 10	Wal.	Black	37	450.00 Pair
	dB+ 500	Ported	10	4½	Dome	1	Dome		35-22 ±3	91	15	2k,6k	6/4	27 x 27 x 10	Wal.	Black	43	569.00 Pair
DBX	Soundfield 1A	Ac. Sus.	(4)10	(4)4	Cones	(6)½	Domes		20-20 ±2	90	40	450,3.15k	4/2.5	42 x 16 x 16	Opt., Wood	Brown Knit	80	2950.00 Pair
	Soundfield 10	Ac. Sus.	(2)10	(2)4	Cones	(4)½	Domes		30-20 ±2.5	90	30	450,3.15k	4/2.5	34 x 16 x 16	Opt., Wood	Brown Knit	55	1399.00 Pair
	Soundfield 100	Vented	10	4	Cone	(3)½	Domes		40-20 ±3	91	20	450,3.15k	4/2.5	82 x 16 x 13	Wal.	Brown Knit	45	899.00 Pair
	Soundfield 1000	Vented	8	4	Cone	(2)½	Domes		45-20 ±3	91	20	450,3.15k	4/2.5	31 x 14 x 11	Opt.	Opt., Knit	35	599.00 Pair
DCM	Time Frame TF2000	Trans. Line	(2)8	(2)6½	Cones	1	Dome		25-20	92	20	500,2k	8/4	60 x 23 x 11	Dark Oak	Brown Knit	100	From 1999.00 Pair
	Time Frame TF700	Trans. Line	8	4	Cone	¾	Dome		28-20	90	20		8/4	45 x 18 x 7	Dark Oak	Brown Knit	42	From 699.00 Pair
	Time Frame TF500	Trans. Line	6½			¾	Dome		31-20	89	10	2.5k	8/4	41 x 17 x 7	Dark Oak	Brown Knit	44	From 499.00 Pair
	Time Frame TF350	Trans. Line	6½			¾	Dome		35-20	89	10	2.5k	8/4	37 x 15 x 7	Dark Oak	Brown Knit	31	From 399.00 Pair
	Time Frame TF250	Bass Ref.	6½			¾	Dome		42-20	89	10	3k	8/4	34 x 13 x 6	Dark Oak	Brown Knit	21	From 249.00 Pair
	Time Window 3	Trans. Line	8	6½	Cone	(2)¾	Domes	M,T	24-20	90	15		8/4	39 x 16 x 12	Oak	Brown Cloth	90 Pair	From 1399.00 Pair
	Time Window 1A	Trans. Line	(2)6½			(2)¾	Domes		30-20	91	10	2.8k	8/4	36 x 15 x 12	Oak	Brown Cloth	64 Pair	From 879.00 Pair
DENNESEN	Nine	Hybrid ES	6½			(6)3 Sq. In.	ES		35-35 ±2	89	50	3.5k	8/6	25 x 10 x 15	Oiled Wal.	Black Foam	30	1650.00 Pair
	Subwoofer	Ported Subwoof.	10						20-100	89	50	100	8/8	18 x 15 x 12	Oiled Wal.	Black Foam	35	400.00
DESIGN ACOUSTICS	PS-5	Ac. Sus.	5½			1	Dome	T	70-22	90	15	2.4k	8/5.8	11 x 7 x 5	Wal.	Brown Cloth	9	350.00 Pair
	PS-LF	Ac. Sus. Subwoof.	12						40-140	90	15	150	8/4.3	22 x 16 x 16	Wal.	Brown Cloth	50	350.00
	PS-6	Ac. Sus.	6½			¾	Dome		50-20	88	10	3k	8/5.7	8 x 12 x 11	Wal. Vinyl	Brown Cloth	24	239.90 Pair
	PS-6V		6½			¾	Dome		50-20	88	10	3k	8/5.7	8 x 12 x 11	Wal. Vinyl	Brown Cloth	24	259.95 Pair
	PS-8a		8	4	Cone	¾	Dome	T	55-21	90	15	200,2.4k		9 x 11 x 14	Wal. Vinyl	Brown Cloth	34	379.90 Pair
(Continued)	PS-10		10	5	Cone	1	Dome	T	48-22	90	15	190,2.4k	8/5.6	14 x 11 x 14	Wal. Vinyl	Brown Cloth	25	499.00 Pair

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"The D-8500's octave-to-octave frequency balance — one of the key factors affecting a speaker's sound quality — was exceptionally uniform and smooth. . ."

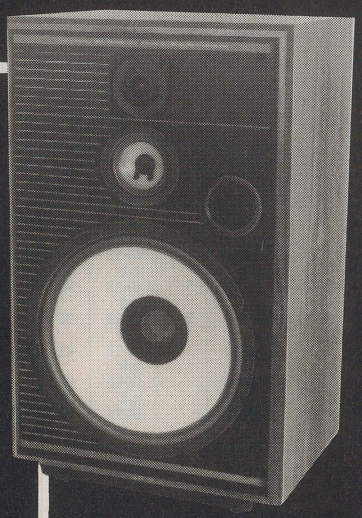
As reviewed in the June '86
StereoReview

". . . In this (American Acoustics) speaker, the big cone is used the way it should be, to obtain low distortion at high levels all the way down into the deep bass.

"This ties in with the primary goal American Acoustics has set for its Digital Series speakers: accurate reproduction at both very high and very low levels, to cope with the extraordinary dynamic range available on the best Compact Discs.

". . . in short, this (the D-8500) is especially suitable for those who want to be able to play their music loud without coloration or distortion and without having to buy a huge amplifier. If you're in that category, you certainly should give the D-8500 a serious listen."

As reviewed in the June '86
HIGH FIDELITY



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LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Superweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
DESIGN ACOUSTICS (Continued)	PS-30	Ac. Sus. Sat. & Subwoof.	12	5	Cone	1	Dome	T	40-22	90	15	140,2.4k	8/4.3	Three Pieces	Wal.	Brown Cloth	68	695.00 Sys.
	OS-1	Omni	5			1½	Cone		90-18	82	10	3k	8/6.4	10 x 7 Dia.	PVC Resin	Black Nylon	13	259.95 Pair
DESKTOP LOUDSPEAKER SYSTEMS	DLS-1A	Sat. & Subwoof.	(2)6½	2	Cone	⅞	Dome	No	47-20 ±5	87	25	170,3.3k	4/3	Three Pieces	Opt.	Black Knit	30 Sys.	550.00 Sys.
	DLS-2	Sat. & Subwoof.	(2)6½	2	Cone	⅞	Dome	No	37-20 ±3	87	20	170,3.3k	4/3	Four Pieces	Wal.	Black Knit	40 Sys.	850.00 Sys.
	DM-1	Sat.	2¼			¾	Dome	No	170-20 ±2	86	10	3.3k	9/7	3 x 4 x 7	Opt.	Black Knit	3	150.00
	BMW-1	Ported Subwoof.	(2)6½					No	50-170 ±3	87	20	170	5/4	6 x 8 x 16	Opt.		19	300.00
	BMW-2	Pas. Rad. Subwoof.	6½					No	30-170 ±3	87	10	170	6/4.5	10 x 12 x 14	Opt.		15	300.00
DUNTECH	Sovereign 2001	Ac. Sus.	(2)12, (2)7	(2)3	Domes	¾	Dome	W	27-20 ±2	90	100	300,2k,6k	4.5/3	74 x 32 x 14	Opt.	Black Knit	375	15,000. Pair
	Thor	Ac. Sus. Active Subwoof.	12		Cone			W	24-110 ±1.5	91	Inc.	110	/4	31 x 17 x 13	Oiled Oak	Black Foam	82	950.00
	PCL-3	Closed Box	6½		Cone	1½	Dome		55-20 ±1.5	83	50	6k	8/6.5	24 x 17 x 4	Oiled Oak	Black Knit	16	850.00 Pair
	PCL-5	Closed Box	(2)6½		Cone	1½	Dome		50-20 ±1.5	92	25	6k	8/6.5	24 x 33 x 4	Oiled Oak	Black Foam	35	1675.00 Pair
	PCL-15	Closed Box	6½		Cone	1½	Dome		45-20 ±1.5	86	50	6k	8/6.5	20 x 8 x 6	Oiled Oak	Black Knit	30	575.00 Pair
	PCL-100	Ac. Sus.	(2)12	(2)6½	Cones	1½	Dome		22-20 ±1.5	92	25	110,6k	8/6.5	76 x 22 x 28	Opt., Wood	Black Knit	275	10,000. Pair
DYNAMIC ELECTRO ACOUSTICS	Ovation	Bass Ref.	8			1	Dome		34-20 ±2	86	30	2.7k	8/7	11 x 11 x 36	Cherry Lam.	Knit	48	1400.00 Pair
DYNAUDIO	Consequence	Inf. Baf.	(2)12	6,3	Cone, Dome	1,¾	Domes		20-40 ±3	94	100			50 x 16 x 24	Rswd.	Black Knit	120	8500.00 Pair
EBONY ACOUSTICS	D6	Pressure Release	6			2	Cone		60-18 ±3	90	25	2k	8/7	10 x 8 x 16	Opt., Wood	Black Knit	25 Pair	499.95 Pair
	D9	Pressure Release	9			1	Dome		35-22 ±3	91	25	2k	8/7	11 x 16 x 27	Opt., Wood	Black Knit	50	999.95 Pair
ELECTRO-COMPANIET	Prisma		8	5	Cone	¾	Dome		200-20 ±1.5	89	25	600,4k	6/4.5	16 x 16 x 40	Opt.		80	2000.00 Pair
ELECTRO-VOICE	Sentry 100A Monitor	B4 Vented	8			1½	Dome	T	45-18 ±3	91		2k	6/4.5	17 x 12 x 11	Black Vinyl	Gray Knit	28	255.00
	Sentry 100EL Monitor	Powered B4 Vented	8			1½	Dome	T	45-18 ±3		Inc.	2k	30k/ 10k	17 x 12 x 12	Black Vinyl	Gray Knit	33	499.00
	Sentry 500 Monitor	B4 Vented	12			1½	Dome	T	40-18 ±3	96		1.5k	8/6	24 x 27 x 13	Black Vinyl	Gray Knit	70	499.00
	Sentry 505 Monitor	B4 Vented	12			1½	Dome	T	40-18 ±3	96		1.5k	8/6	19 x 26 x 19	Black Vinyl	Gray Knit	60	499.00
	Interface 1 Series II	Thiele Vented	8			1½	Dome		56-18 ±3	92		1.5k	8/5	11 x 21 x 10	Sim. Wal.	Brown Knit	23	210.00
	Interface 2 Series II	Pas. Rad.	8			1½	Dome		47-18 ±3	92		1.5k	8/5	14 x 24 x 11	Sim. Wal.	Brown Knit	25	273.00
	Interface 3 Series II	Pas. Rad.	8			1½	Dome		40-18 ±3	92		1.5k	8/5	15 x 25 x 13	Sim. Wal.	Brown Knit	33	315.00
ENERGY	22 Pro Monitor Designer Series	Bass Ref.	7			1½	Dome		28-45 ±3	86	20	1.5k	8/4	25 x 11 x 12	Oak Ven.	Black Knit	34	1000.00 Pair
	22 Pro Monitor	Bass Ref.	7			1½	Dome		28-45 ±3	86	20	1.5k	8/4	25 x 11 x 12	Wal. Vinyl	Black	34	800.00 Pair w/ Stands
	22 Reference	Bass Ref.	7			1½	Dome		28-45 ±3	86	20	1.5k	8/4	25 x 11 x 12	Opt.	Black	34	1100.00 Pair w/ Stands
	22 Reference Connoisseur	Bass Ref.	7			1½	Dome		25-45 ±2	86	20	1.5k	8/4	35 x 11 x 14	Opt., Ven.	Opt.	80	From 1300.00 Pair
ENTEC	SW-1	Powered, Sealed Subwoof.	(3)10					W	15-100 ±3		250 Inc.	100	10k	17 x 12 x 36	Opt.	Black Foam	100	4495.00 Pair
	SW-2	Powered, Sealed Subwoof.	(3)10					W	12-100 ±3		300 Inc.	100	10k	25 x 12 x 36	Opt.	Black Foam	140	6495.00 Pair
	SW-5	Powered, Sealed Subwoof.	10					W	18-100		120 Inc.	100	10k	17 x 12 x 36	Black	Black Foam	60	2695.00 Pair
EPI	T/E 70 Series II	Inf. Baf.	6			1	Dome		55-20 ±3	88	15	1.8k	8/	18 x 11 x 6	Wood Vinyl	Brown Cloth	13	99.95
	T/E 100 Series II	Inf. Baf.	8			1	Dome		40-20 ±3	88	15	1.8k	8/	21 x 13 x 7	Wood Vinyl	Brown Cloth	18	129.95
	T/E 120 Series II	Inf. Baf.	10			1	Dome		38-20 ±3	88	15	1.8k	8/	26 x 16 x 8	Wood Vinyl	Brown Cloth	24	159.95
(Continued)																		

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LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
EPI (Continued)	T/E 250 Series II	Inf. Baf.	8	4	Cone	1	Dome		42-20 ±3	88	15	300,2.5k	6/	26 x 16 x 8	Wood Vinyl	Brown Cloth	26	179.95
	T/E 280 Series II	Pas. Rad.	8			1	Dome		32-20 ±3	90	15	1.8k	8/	31 x 12 x 9	Wood Vinyl	Brown Cloth	28	219.95
	T/E 320 Series II	Inf. Baf.	10	4	Cone	1	Dome		38-20 ±3	88	15	300,2.5k	6/	34 x 13 x 10	Wood Vinyl	Brown Cloth	32	274.95
	T/E Monitor 1	Vented	10	6	Cone	4½ x 2¾	Horn	T	40-20	92	10	500,5k	6/	31 x 12 x 9	Black Vinyl	Black Cloth	30	219.95
	T/E Monitor 2	Vented	(2)10	6	Cone	4½ x 2¾	Horn	T	35-20	93	10	500,5k	6/	37 x 14 x 11	Black Vinyl	Black Cloth	43	299.95
EPIK AUDIO	Tower Monitor	Aperiodic	10	(2)2	Cones		Leaf		100-43 ±3	89	40	500,7k	5/3	20 x 20 x 60	Opt., Wood	Brown Knit	450 Pair	3150.00 Pair
	LSM	Aperiodic	(2)6½	4	Cone		Leaf		50-43 ±2	89	40	500,5k	4/3	16 x 16 x 48	Opt., Wood	Brown Knit	170 Pair	1495.00 Pair
	Tower LSM	Trans. Line	(3)6½	(2)4	Cones		Leaf		50-43 ±2	90	40	500,5k	4/3	22 x 22 x 54	Opt., Wood	Brown Knit	425 Pair	3995.00 Pair
	208	Trans. Line Subwoof.	8						28-100 ±5	90	60		4/4	16 x 16 x 48	Opt., Wood	Brown Knit	180 Pair	995.00 Pair
	410	Trans. Line Subwoof.	(2)10						16-75 ±2	93	100		4/4	22 x 22 x 72	Opt., Wood	Brown Knit	650 Pair	1995.00 Pair
	810	Inf. Baf. Subwoof.	(4)10						16-100 ±2	96	100		2/2	30 x 30 x 72	Opt., Wood	Brown Knit	700 Pair	2595.00 Pair
ESM/ENERGY	ESM-4	Bass Ref.	6½			¾	Dome		60-20 ±3	88	10	2.7k	8/4	9 x 13 x 9	Opt., Vinyl	Black Knit	11	200.00 Pair
	ESM-2	Bass Ref.	8			1	Dome		40-22 ±3	86	12	2k	8/4	23 x 11 x 11	Opt.	Black	24	330.00 Pair
	ESM-3	Bass Ref.	8			1	Dome		45-22 ±3	86	10	2k	8/4	20 x 10 x 9	Opt.	Black	20	250.00 Pair
ESSENCE	Amethyst 30	Trans. Line	6			1	Dome		32-21 ±3	90	30	2k	8/6	33 x 10 x 14	Opt., Wood	Opt., Knit	70	1650.00 Pair
	Amethyst 70	Trans. Line	8	3	Cone	1,0.7	Domes		29-23 ±3	91	50	200,2k, 6.5k	8/6	46 x 12 x 16	Opt., Wood	Opt., Knit	130	4685.00 Pair
	Amethyst 10a	Trans. Line	8	(2)6, 3	Cones	1,0.7	Domes		26-23 ±3	91	60	80,200, 2k,6.5k	8/6	51 x 15 x 25	Opt., Wood	Opt., Knit	220	6850.00 Pair
ESS LABORATORY	HD 312	Ported	12	2x6	Horn	2.4	Horn	M,T	38-20	95	10	1.5k,5k	8/3	14 x 12 x 25	Wal. Vinyl	Black Knit	42½	498.00 Pair
	HD 310	Ported	10	2x6	Horn	2.4	Horn	M,T	45-20	95	10	1.5k,5k	8/3	12 x 12 x 22	Wal. Vinyl	Black Knit	35½	398.00 Pair
	HD 210	Ported	10			2.4	Horn	T	45-20	95	10	2.5k	8/3	12 x 12 x 22	Wal. Vinyl	Black Knit	33½	298.00 Pair
	AMT Monitor	Pas. Rad.	12		Heil	21½ Sq. In.	Heil AMT	M,ST	35-23 ±3	91	35	800	6/3	12 x 19 x 41	Oiled Wal.	Black Knit	82	1400.00 Pair
	820 Mini-Monitor	Pas. Rad.	6½		Heil	10½ Sq. In.	Heil AMT		55-23 ±3	90	10	1.8k	6/3	8 x 9 x 14	Oiled Wal.	Black Knit	15½	220.00 Pair
	AMT 1D	Pas. Rad.	12		Heil	21½ Sq. In.	Heil AMT	M,ST	35-23 ±3	91	35	800	6/3	16 x 16 x 35	Oiled Wal.	Black Knit	89	1270.00 Pair
	AMT II	Pas. Rad.	10		Heil	21½ Sq. In.	Heil AMT	ST	38-23 ±3	91	30	900	6/3	15 x 15 x 34	Oiled Wal.	Black Knit	65	950.00 Pair
	AMT Bookshelf	Pas. Rad.	12		Heil	21½ Sq. In.	Heil AMT	ST	40-23 ±3	91	35	800	6/3	13 x 14 x 25	Oiled Wal.	Black Knit	65	1100.00 Pair
	PS 6D	Pas. Rad.	10		Heil	10½ Sq. In.	Heil AMT	ST	40-22 ±3	93	15	1.8k	6/3	14 x 14 x 24	Oiled Wal.	Black Knit	49	678.00 Pair
	620 Mini-Monitor	Pas. Rad.	5¼			1½	Dome		60-20 ±5	86.5	10	2.5k	8/3	8 x 7 x 12	Oiled Wal.	Black Knit	17	152.00 Pair
EUPHONIC AUDIO	EA-10	Vented	10	(2)5	Cones	1	Dome	M,T	32-20 ±2	91	20	180,2.4k	6/4	42 x 14 x 16	Opt.	Black Knit	80	2795.00 Pair
	EA-20	Vented	10	(2)4½	Cones	¾	Dome	M,T	35-20 ±3	91	20	300,4k	6/4	40 x 13 x 16	Opt.	Black Knit	72	1795.00 Pair
	EA-30	Vented	8	(2)4½	Cones	¾	Dome		35-20 ±3	90	20	300,4k	6/4	36 x 12 x 12	Opt.	Black Knit	54	1195.00 Pair
	EA-3	Vented	8			1	Dome		50-20 ±3	90	20	2.2k	8/6	24 x 10 x 12	Opt., Wood	Brown Knit	28	550.00 Pair
FANFARE ACOUSTICS	Tempo 2	Ac. Sus.	6½	6½	Cone	1	Dome		38-22 ±2	90	20	400,3.5k	6/3	12 x 11 x 24	Opt.	Opt., Knit	38	499.00 Pair
	Prelude	Tuned Port	6½			¾	Dome		55-22 ±2	90	20	3.5k	6/3	14 x 10 x 10	Oak	Black Knit	16	275.00 Pair
FIDELUS AUDIO	903FL	Slot Loaded Port	9	5	Cone	1¼	Dome		30-30 ±3	90	30	250,6k	8/4	13 x 14 x 48	Oiled Oak	Opt.	65	1495.00 Pair
	SW	Slot Loaded Subwoof.	10						16-100 ±2	90		Ext.	8/4	22 x 24 x 48	Oiled Oak	None	220	990.00
FISHER	STA-226	Powered	8			3					30 Inc.			10 x 19 x 11				199.95
	STA-341	Powered	8	4		3					30 Inc.			10 x 23 x 11				199.95
	STA-361	Powered	8	4		3					30 Inc.			10 x 24 x 11				199.95
	STA-381	Powered	8	4		3					30 Inc.			10 x 26 x 11				199.95
FMS	FM-2	Aperiodic	6½	1¼	Dome	¾	Dome	No	45-35	87	25	2.2k,14k	6/4	11 x 9 x 20	Paint	Black Foam	40	2450.00 Pair

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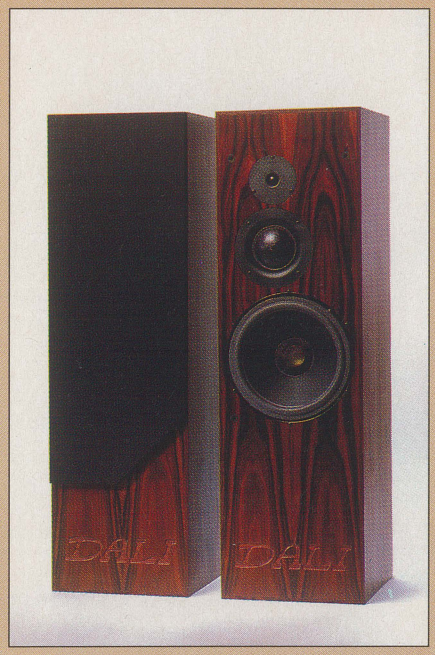
DALI: COMBINING ADVANCED TECHNOLOGY WITH TRADITIONAL EUROPEAN CRAFTSMANSHIP

One of the more innovative speaker companies to appear in recent years, DALI — for Danish American Limited Incorporated — has a full line of impressively engineered speaker systems. The company has recently filed for patents on several unique designs reflecting significant breakthroughs in a number of key performance areas.



INNOVATIVE ENGINEERING

Since the founding of the company, DALI engineers have been investigating the complex acoustic relationship between speaker systems and rooms. Intensive research has shown that reflected room sound is a frequently ignored, but critical factor in achieving realistic performance. And it is the view of Dali's engineers that intelligent speaker design involves proper control of reflected sound combined with a precisely defined directionality. A psychoacoustically plausible sound stage is not possible unless the first-arrival sounds and reflected sounds are maintained in proper perspective. As a result of this philosophy, Dali speaker systems are more "room friendly," are easier to place, and have a larger "sweet spot" with a wider and more accurate stereo imaging than conventional designs.

Another proprietary Dali development, dubbed VE2BR (Vibration Elimination 2nd-order Butterworth Reflex), eliminates the usual cabinet panel vibrations caused by conventional woofer mountings. These vibrations are an unappreciated source of a variety of sonic colorations. DALI's configuration was described in the patent abstract: "Two woofers are connected back to back, one on the front plate of the system and the other on an internal baffle board . . . the back-to-back arrangement and mutually opposed woofers results in a non-vibrating unit." In addition to negating potentially destructive vibrations, the DALI VE2BR design also provides a very low system resonance, excellent transient response and low frequency efficiency, and a significant reduction in harmonic distortion.

A third, more recent DALI patent involves a double magnet, dual voice coil woofer. The design, called DMSLS (Dual Magnet Super Linear Stroke) provides an extended and linear woofer cone excursion which results in very low distortion at substantial low-frequency output levels.

DALI's advanced technology appears in the six models marketed in the United States: the bookshelf models DALI 2 and 3 and the floor standing monitor models DALI 4, 6, 7, and 8. The DALI 7 is the first model to use a patented asymmetrical room-interface crossover technology, and will be available later this year. The DALI 40, also due this year, will incorporate the VE2BR Principle in what will be judged a world class speaker design. As befits their Danish origin, All DALI speakers are carefully assembled and finished in elegant, hand-rubbed natural walnut veneers.

In the past two years, engineering advances have earned DALI a reputation for being one of the world's most respected and innovative loudspeaker manufacturers. The company is currently represented in virtually every major country and has received a series of excellent reviews in the audio press internationally.

INNOVATIVE MARKETING

DALI's ongoing research has the dual goals of improving the quality of loudspeaker reproduction while lowering its cost to the consumer. This dedication to cost-effective quality has resulted in both a superb product line *and* an innovative marketing and distribution plan. DALI speakers are *not* currently available at stereo retailers; instead they are sold directly to the public on an individual purchase basis. All DALI speakers are offered on a 10-day "satisfaction guaranteed or money back" basis. If you would like more information about our products and direct marketing policy, we encourage you to write or call:

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MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
FOCAL	030	Bass Ref.	5¼			1	Dome		58-19 ±3	89	25	400,5k	4/3.8	7 x 13 x 11	Opt.	Opt.		Kit, 350.00 Pair
	130	Bass Ref.	7			1	Dome		54-19 ±3	91	20	300,4.2k	4/3.6	10 x 18 x 10	Opt.	Opt.		Kit, 406.00 Pair
	230	Bass Ref.	8			1	Dome		48-19 ±3	93	20	300,4k	4/3.6	11 x 28 x 13	Opt.	Opt.		Kit, 515.00 Pair
	330	Bass Ref.	8			1	Dome		44-19 ±3	92	20	4.2k	8/7	10 x 36 x 11	Opt.	Opt.		Kit, 630.00 Pair
	430	Trans. Line	8	5¼	Cone	1	Dome		38-19 ±2	92	20	425,5k	8/7	9 x 47 x 13	Opt.	Opt.		Kit, 1045.00 Pair
	600L	Bass Ref.	10	7	Cone	1	Dome		48-19 ±2	94	20	500,4.2k	8/7	14 x 49 x 14	Opt.	Opt.		Kit, 1170.00 Pair
	Sub W30	Inf. Baf. Subwoof.	(2)10						33-80 ±2	92	60	80	8/4	13 x 27 x 13	Opt.	Opt.		Kit, 555.00
	Sub W50	Bass Ref. Subwoof.	15						33-150 ±2	95	60	150	8/7	21 x 33 x 21	Opt.	Opt.		Kit, 810.00
	The Egg	Bass Ref.	7			1	Dome		55-19 ±3	90	20	250,3.2k	4/3.6	Egg Shape, 12 x 16	Opt.	Opt.		Kit, 450.00 Pair
	Audiom	Onken	15	8	Cone	1	Horn		48-19 ±1.5	100	20	500,5k	8/7.2	Two Pieces per Side	Opt.	Opt.		Kit, 2140.00 Pair
	Audiom-A	Bass Ref.		8	Cone	1	Horn		35-19 ±1.5	98	20	550	8/7.2	Two Pieces per Side	Opt.	Opt.		Kit, 2340.00 Pair
FOCUS SPEAKER SYSTEMS	.7	Tuned Port	8			1	Dome		40-19 ±2	90	20	2.75k	8/6.8	12 x 12 x 28	Oak	Black Foam	38	799.00 Pair
	.5	Tuned Port	8			1	Dome		50-19 ±2	90	20	2.75k	8/6.8	12 x 12 x 19	Oak	Black Foam	28	645.00 Pair
FOURIER SYSTEMS	6e	Vented	6½	1	Dome	⅜	Dome		50-20 ±3	90	75	3k,12k	6/2.25	22 x 9 x 8	Wood Ven.		24	595.00 Pair
	8e	Vented	8¼	1	Dome	⅜	Dome		40-20 ±3	90	75	3k,12k	6/2.25	24 x 11 x 12	Rswd. Ven.		30	1095.00 Pair
	88r	Vented	(2)8¼			32L	Ribbon		32-20 ±3	90	100	400		74 x 11 x 16	Rswd. Ven.		105	3995.00 Pair
FRANKMANN RESEARCH	FR III	Inf. Baf. Sat. & Subwoof.	(2)12	6	Cone		Horn	T	32-20	92	30	200,4k	8/6	Three Pieces	Opt.	Opt.		695.00 Sys.
	FR V	Inf. Baf. Sat. & Subwoof.	(4)12	(2)6	Cones		Horn, Cone	T	28-20	94	30	200,4k, 10k	8/6	Three Pieces	Opt.	Opt.		995.00 Sys.
	FR IIB	Inf. Baf. Subwoof.	(2)12						32-200	92	30	200	8/5	29 x 20 x 20	Opt.	Opt.		395.00
	FR IVB	Inf. Baf. Subwoof.	(4)12						28-200	94	30	200	8/6	30 x 30 x 20	Opt.	Opt.		595.00
	FR VIIIB	Inf. Baf. Subwoof.	(8)12						19-200	96	30	200	8/6	50 x 34 x 25	Opt.	Opt.		1100.00
FRIED PRODUCTS	C/3L	Trans. Line	6½			¾	Dome		50-22 ±3	91	20	2.7k	8/6.3	11 x 14 x 15	Opt.	Black Foam	35	950.00 Pair; Kit, 430.00 Pair
	G/3	Trans. Line	10	6½	Cone	¾	Dome		23-22 ±3	91	20	99,2.7k	8/6.3	18 x 16 x 44	Wal.	Black Foam	100	2190.00 Pair
	Beta	Press. Rel.	6½			2½	Cone/ Dome		60-20 ±3	87	20	2k	8/6	8 x 8 x 14	Opt., Vinyl	Black Knit	30 Pair	300.00 Pair
	Q/3	Line Tun.	8			1	Dome	T	45-18 ±3	89	20	2k	8/6	11 x 9 x 20	Opt., Vinyl	Black Knit	40 Pair	400.00 Pair
	A/3	Line Tun.	8			1	Dome	T	40-18 ±3	90	20	2k	8/6	13 x 10 x 23	Oiled Wal.	Black Knit	35	600.00 Pair
	The Subwoofer	Line Tun. Subwoof.	10						32-90 ±3	89	20	90	8/6	15 x 12 x 24	Opt., Vinyl	Black Knit	55	325.00
	Studio IV	Line Tun.	8			¾	Dome		26-22 ±3	90	20	2.7k	8/6	12 x 18 x 39	Oiled Wal.	Black Foam	80	1200.00 Pair
	O/3	Trans. Line Subwoof.	10						23-100 ±3	91	20	100	8/6	24 x 13 x 31			45 Pair	Kit, 700.00 Pair
	SM/3	Trans. Line Subwoof.	12						20-100 ±3	92	20	100	8/6	29 x 15 x 38			50 Pair	Kit, 800.00 Pair
FULTON AUDIO	Tempo	Oval Window	8	5	Cone	(2)2¼	Cones		35-42 ±2	94	10	65,1.4k, 9k	8/7	12 x 10 x 19	Wal. Lacq.	Black Knit	45	995.00 Pair
	Rhapsody	Oval Window	8	5	Cone	(2)2¼	Cones		25-42 ±2	94	10	55,1.4k, 9k,16k	8/7	12 x 12 x 37	Wal. Lacq.	Brown Knit	75	1950.00 Pair
	Crescendo	Oval Window	(3)8	(2)5	Cones	(3)2¼	Cones		20-42 ±1.5	92	15	50,90, 1.4k,9k, 16k	8/6	12 x 12 x 48	Wal. Lacq.	Black Knit	125	3500.00 Pair
	Symphony	Oval Window	(5)8	(2)5	Cones	(2)2¼	Cones		16-42 ±1.5	90	25	45,80, 1.4k,9k, 16k	8/5	24 x 24 x 50	Wal. Lacq.	Opt., Knit	265	5900.00 Pair
GENESIS	7	Vented	6½			1	Dome	No	60-20 ±3	90	10	2.5k	8/6	16 x 12 x 6	Teak	Tan Knit	10½	198.00 Pair
(Continued)	11	Vented	8			1	Dome	No	40-20 ±4	90	15	1.5k	8/6	19 x 12 x 8	Teak	Tan Knit	16	298.00 Pair

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Cloth and Material	Weight, Lbs.	Price, $
GENESIS (Continued)	22	Pas. Rad.	6½			1	Dome	No	32-20 ±4	86	15	1.5k	8/6	24 x 14 x 8	Teak	Tan Knit	28	398.00 Pair
	33	Pas. Rad.	8			1	Dome	No	28-20 ±4	89	15	1.5k	8/6	29 x 16 x 8	Teak	Tan Knit	31	498.00 Pair
	44	Pas. Rad.	8			¾	Dome	No	25-25 ±4	88	30	1.1k	6/4	33 x 18 x 9	Opt., Wood	Opt., Knit	44	From 698.00 Pair
	66	Vented Fourth Order	(2)8	3	Dome	¾	Dome	No	28-22 ±3	90	30	550,4.5k	8/4	44 x 18 x 12	Oak Ven.	Brown Knit	81	1498.00 Pair
GNP LOUDSPEAKERS	Valkyrie	Sat. & Subwoof.	(2)6½	6½,3	Cone, Dome	1	Dome	M,T	34-21 ±3	90	25	125,700, 2.5k	8/	Six Pieces	Opt., Wood	Black Knit	188 Sys.	1795.00 Sys.
	System 220	Sat. & Subwoof.	(2)6½	6½,3	Cone, Dome	1	Dome	M,T	34-21 ±3	90	25	125,700, 2.5k	8/	Four Pieces	Opt., Wood	Black Knit	138 Sys.	1149.00 Sys.
	System 120	Sat. & Subwoof.	8	6½,3	Cone, Dome	1	Dome	M,T	44-21 ±3	90	25	125,700, 2.5k	8/	Four Pieces	Opt., Wood	Black Knit	116 Sys.	999.00 Sys.
	System 110	Sat. & Subwoof.	8	6½	Cone	1	Dome	T	44-21 ±3	90	25	125,2.5k	8/	Four Pieces	Opt., Wood	Black Knit	102 Sys.	749.00 Sys.
	20	Sat.	6½	3	Dome	1	Dome	M,T	59-21 ±3	90	10	700,2.5k	8/	17 x 9 x 9	Opt., Wood	Black Knit	22	599.00 Pair
	10	Sat.	6½			1	Dome	T	68-21 ±3	90	10	2.5k	8/	12 x 8 x 7	Opt., Wood	Black Knit	15	349.00 Pair
GOLD RIBBON CONCEPTS	3.0B	Ribbon & Trans. Line Subwoof.	(2)7			0.8 x 30	Ribbon		35-30 ±3	91	100	400	5/2	17 x 14 x 60	Rswd.	Black Knit	150	4950.00 Pair
	6.0B	Ribbon & Trans. Line Subwoof.	(3)8			0.8 x 60	Ribbon		28-30 ±3	94	Bi-Amp 100	400	4/3	24 x 22 x 92	Rswd.	Black Knit	300	8950.00 Pair
	3.0 Satellite	Ribbon Sat.				0.8 x 30	Ribbon		400-30 ±3	91	100	400	2/2	6 x 1 x 32	Nxtl.	Opt.	15	1600.00 Pair
	15.0B Sub	Dual Compound Subwoof.	(2)15						21-400 ±2	93	100		4/3	20 x 30 x 25	Rswd.	Black Knit	100	3200.00 Pair
GOLD SOUND	GS15	Bass Ref. Subwoof.	15						28-150 ±3	95	5	150	4/4	44 x 18 x 14	Oiled Wal.	Brown Knit		Kit, 199.00
	GS15(2)	Bass Ref. Subwoof.	(2)15						28-150 ±3	98	5	150	8/4	44 x 18 x 14	Oiled Wal.	Brown Knit		Kit, 299.00 Pair
	GS15(4)	Bass Ref. Subwoof.	(4)15						25-150 ±3	100	5	150	8/4	Four Pieces	Oiled Wal.	Brown Knit		Kit, 489.00 Sys.
	Kit #.5	Ac. Sus.	5			¾	Dome		60-20 ±3	90	10	4k	4/	12 x 8 x 7	Oiled Wal.	Brown Knit	12	Kit, 79.00 Pair
	Kit #5	Bass Ref.	15	6½	Cone	1¼	Dome		28-20 ±3	94	5	250,3k	4/	44 x 18 x 14	Oiled Wal.	Brown Knit	80	Kit, 389.00 Pair
	Kit #1	Bass Ref.	6½			1	Dome	No	48-20 ±3	92	5	2.5k	8/4	19 x 12 x 10	Opt.	Brown Knit	13	Kit, 99.00 Pair
	Kit #2	Bass Ref.	8	5¼	Cone	1	Dome	No	45-20 ±3	91	5	250,3k	8/4	19 x 12 x 10	Opt.	Brown Knit	18	Kit, 169.00 Pair
	Kit #3	Bass Ref.	10	5¼	Cone	1	Dome	No	42-20 ±3	92	5	250,3k	8/4	25 x 14 x 11	Opt.	Brown Knit	29	Kit, 249.00 Pair
	Kit #4	Bass Ref.	12	5¼	Cone	1	Dome	No	36-20 ±3	93	5	250,3k	8/4	25 x 14 x 11	Opt.	Brown Knit	29	Kit, 299.00 Pair
	Kit #6	Bass Ref.	(2)10	6½	Cone	1¼, 4x5	Dome, Ribbon	No	38-25	94	5	250,3k	8/4	37 x 14 x 11	Opt.	Brown Knit	35	Kit, 449.00 Pair
	Kit #7	Bass Ref.	(2)12	7	Cone	1¼, 4x5	Dome, Leaf	M,T	36-30 ±3	95	5	200,2k, 8k	8/4	44 x 18 x 17	Opt.	Brown Knit	45	Kit, 599.00 Pair
	Kit #7LA	Bass Ref.	(2)12	7	Cone	1¼, (2)4x5	Dome, Leaf	M,T	36-50 ±3	95	5	200,2k, 8k	8/4	44 x 18 x 17	Opt.	Brown Knit	50	Kit, 698.00 Pair
	Kit #11	Bass Ref.	15	7	Cone	5x5	Horn	M,T	28-21 ±3	93	5	200,6k	8/4	44 x 18 x 17	Opt.	Brown Knit	124	Kit, 898.00 Pair
	Kit #11 Pro	Bass Ref.	15	7	Cone	5x5	Horn	M,T	45-21 ±3	97	5	200,6k	8/4	44 x 18 x 17	Opt.	Brown Knit	109	Kit, 898.00 Pair
	Kit #12 Pro	Bass Ref.	(2)15	7	Cone	5x5	Horn	M,T	45-21 ±3	97	5	200,5k	8/4	44 x 18 x 17	Opt.	Brown Knit	132	Kit, 1298.00 Pair
	GS10	Bass Ref. Subwoof.	10					No	39-150 ±3	92	5	150	8/4	24 x 13 x 12	Opt.	Brown Knit		Kit, 148.00
	GS10(2)	Bass Ref. Subwoof.	(2)10					No	29-150 ±3	92	5	150	8/4	36 x 14 x 11	Opt.	Brown Knit		Kit, 188.00 Pair
	GS10(4)	Bass Ref. Subwoof.	(4)10					No	29-150 ±3	92	5	150	8/4	Four Pieces	Opt.	Brown Knit		Kit, 289.00 Sys.
	GS12	Bass Ref. Subwoof.	12					No	36-150 ±3	93	5	150	8/4	26 x 16 x 12	Opt.	Brown Knit		Kit, 168.00
	GS12(2)	Bass Ref. Subwoof.	(2)12					No	29-150 ±3	93	5	150	8/4	30 x 18 x 16	Opt.	Brown Knit		Kit, 228.00 Pair
(Continued)																		

EPI
TIME/ENERGY
SPEAKERS

DESIGNED TO
HANDLE THE
EXTREMES.

At EPI we design and build our speakers to one simple precept: speakers should sound not like speakers, but like the instruments and voices of the music being played.

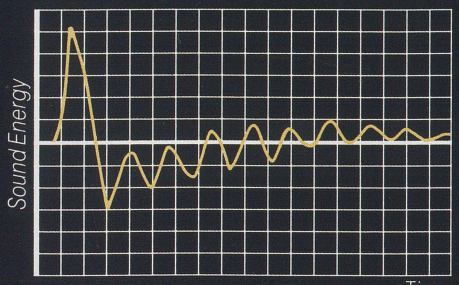
It sounds simple. But today, music lovers can enjoy a wider than ever range of sound, made possible by the current technology of digital recordings. From the most peaceful solo passage to a thunderous full finale, the extremely wide dynamic range of modern recordings places very heavy demands on the playback system, especially the speakers.

It takes sophisticated engineering and precise manufacturing to deliver the entire spectrum of available sound to the listener without distortion.

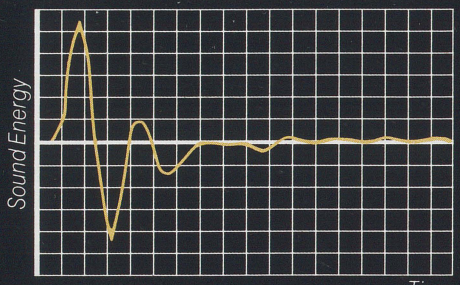
And there are other factors to consider. The amplifier used to drive the speakers may be a modern, powerful unit or a modest component from before the days of digital sound sources. Personal listening habits vary in extremes of their own: some people are happy with moderate volume levels, while others like to actually feel the sound.

To ensure that all music lovers today can enjoy the performance of modern digital signal sources, EPI has developed the Time/Energy Series of speakers: The Time/Energy Series II and the Time/Energy Monitors. Two distinct groups, each with its own special characteristics, allowing you to choose the performance properties that best suit your individual needs. Both groups enjoy the traditional EPI care and attention to detail which ensures superior sonic performance and reliability for many years to come. With EPI Time/Energy speakers, you can literally listen to the future.

Now, regardless of personal preference, electronics, or music, there is an EPI speaker for you.



This graph shows how the "ringing" of a conventional cone makes the speaker produce sound after the signal has ended.



A speaker with a T/E technology cone stops producing sound almost immediately after the signal ends.

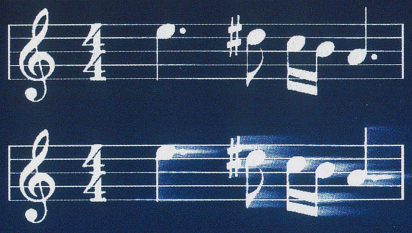
A WORD ABOUT TIME/ENERGY TECHNOLOGY: INGENIOUS.

The Time/Energy speaker technology involves making bass and midrange speaker cones, and treble speaker domes, from a layer of light, stiff thermoplastic that is bonded to, or coated with, another material. The thermoplastic layer strengthens the cones and domes so they won't deform while producing sound. The second layer supplies mechanical damping which prevents the cone or dome from "ringing," or producing sound after the signal from the

The two layer T/E technology cones have the ideal combination of mechanical strength and damping.

amplifier has ended. The benefit is accurate Time/Energy response. This is extremely important because much of the sound information we hear consists of "sonic events" that are only a few ten-thousandths of a second long. Digital recording does an exceptional job of capturing and reproducing these extremely short sonic events. The accurate Time/Energy response of the EPI speakers insures that the wonderfully clean sound of digitally recorded music is revealed. The music is reproduced with unparalleled detail. Each individual instrument and voice can be heard. And the sound retains the sparkle and snap of the original performance.

The T/E speakers provide unexcelled musical definition. Conventional speakers "smear" the sound and hide musical details.



T/E 120

T/E 250

TIME/ENERGY
SERIES II
The design of the Time/Energy Series II speaker line is built on a foundation of generations of EPI speakers that have become classics; standards to which other speakers are compared. With a specific group of performance properties that have made hundreds of thousands of music lovers EPI devotees. Chief among them are amazingly accurate frequency response and ultra-wide dispersion.
T/E 280 Series II
T/E 320
T/E 280

TIME/ENERGY MONITOR SPEAKERS

The Time/Energy Monitor 1 and the Time/Energy Monitor 2 represent a new concept in EPI speakers, combining elements of the Time/Energy technology with design features of professional studio monitor speakers.

For people who want to enjoy the impact and wide dynamic range of digital recordings but whose amplifiers deliver only modest amounts of power, or for those who like to listen to music at the volume levels of a live concert, the Time/Energy Monitors are an ideal choice. Exceptional efficiency plus an incredible power capacity – the same characteristics exhibited by professional monitor speakers – enable the Time/Energy Monitors to generate sound levels that are nothing short of spectacular.

A revised form of the Time/Energy two-layer speaker cone technology was developed for the Monitor's bass and midrange speakers. Their magnet structures and voice coils were specifically engineered to produce maximum efficiency and shrug off the heat of high power operation. Specially tuned, vented cabinets augment the bass speaker efficiency and extend its bass response.

Like the Time/Energy Series II, the Monitor's midrange speakers reproduce a large portion of the sound range, allowing the crossover points to be located away from the musically critical midrange area.

A highly advanced horn loaded treble speaker uses the design technology of sound reinforcement speaker systems. It provides the advantages of high efficiency but with much wider dispersion

and much lower distortion than conventional horn loaded speakers.

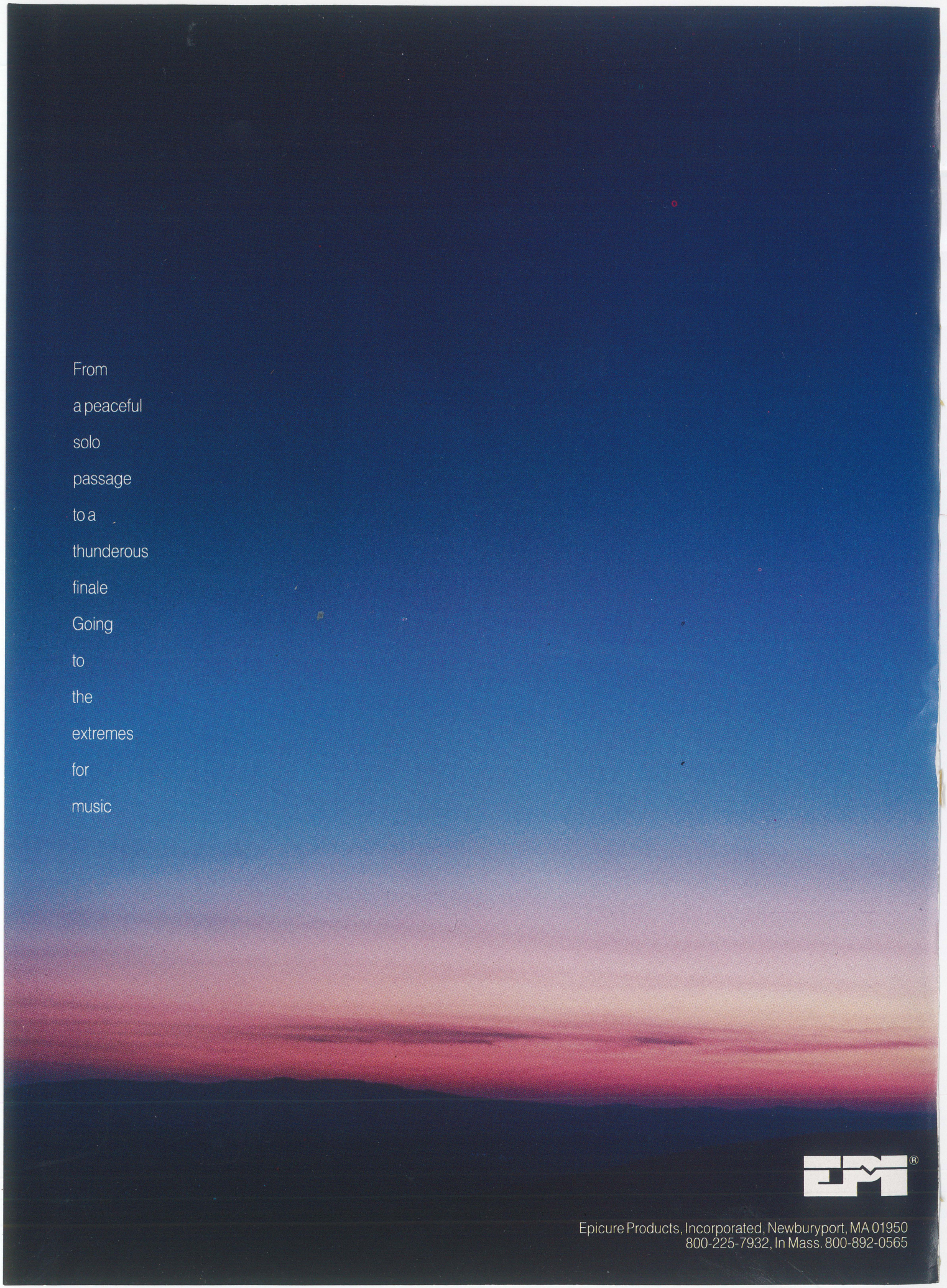
The treble speaker output level control included in the Time/Energy Monitors can be set to produce a technically accurate sound or it may be adjusted to suit the listener's preference and the acoustics of the listening room.

As efficient with space as they are with acoustics, the Monitors' tall, slender cabinet houses the maximum number of sound-producing components in the minimum amount of floor space.

Delivering both efficiency and power, the Time/Energy Monitors can reproduce wide dynamic range signals with ease and incredible flexibility. Whether used with low power "rack system" electronics, or with high performance components, they will take everything they're given and do what they do best: produce exceptional sound.

Monitor 2

Monitor 1



Epicure Products, Incorporated, Newburyport, MA 01950
800-225-7932, In Mass. 800-892-0565

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
GOLD SOUND (Continued)	GS12(4)	Bass Ref. Subwoof.	(4)12					No	29-150 ±3	93	5	150	8/4	Four Pieces	Opt.	Brown Knit		Kit, 328.00 Sys.
	JBL15	Bass Ref. Subwoof.	15					No	38-150 ±3	93	5	150	8/8	18 x 32 x 32	Opt.	Brown Knit		Kit, 229.00
	JBL15(2)	Bass Ref. Subwoof.	(2)15					No	26-125 ±3	93	5	150	8/8	44 x 18 x 14	Opt.	Brown Knit		Kit, 448.00 Pair
	JBL15(4)	Bass Ref. Subwoof.	(4)15					No	26-124 ±3	93	5	150	8/8	Four Pieces	Opt.	Brown Knit		Kit, 880.00 Sys.
	JBL18	Bass Ref. Subwoof.	18					No	38-150 ±3	95	5	150	8/8	37 x 25 x 17	Opt.	Brown Knit		Kit, 318.00
	JBL18(2)	Bass Ref. Subwoof.	(2)18					No	29-300 ±3	95	5	150	8/8	46 x 29 x 19	Opt.	Brown Knit		Kit, 620.00 Pair
	JBL18(4)	Bass Ref. Subwoof.	(4)18					No	29-300 ±3	95	5	150	8/8	Four Pieces	Opt.	Brown Knit		Kit, 1240.00 Sys.
	2005	Ported	15	8,5	Cones	1	Dome	(2) M,T	28-25 ±3	93	10	250,1.2k, 5k	8/	52 x 22 x 14	Opt.	Brown Knit		Kit, 1195.00 Pair
GOTT LABS	Studio	Ac. Sus.	5			1	Dome	T	85-20 ±3	87	20	2.7k	8/5	8 x 6 x 10	Wal.	Brown Cloth	15	149.00
REUBEN GUSS	System 1 Monitor	Inf. Baf. Sat. & Subwoof.	(12)15	(24)5	Domes	(8)1, (58)3	Domes, Piezos	M,T	25-25 ±3	92	30	475,650, 950,3.5k	5/3	Four Pieces	Oiled Wal.	Black Knit	850 Sys.	50,000. Sys.
	System 2 Symphony	Inf. Baf. Sat. & Subwoof.	(4)15	(6)5	Domes	(4)1, (6)3	Domes, Piezos	M,T	28-22 ±3	92	30	475,650, 950,3.5k	4/3	Four Pieces	Oiled Wal.	Black Knit	354 Sys.	9000.00 Sys.
	System 3 Concerto	Inf. Baf. Sat. & Subwoof.	(4)12	(6)5	Domes	(4)1, (6)3	Domes, Piezos	M,T	30-22 ±3	92	30	475,650, 950,3.5k	4/3	Four Pieces	Oiled Wal.	Black Knit	324 Sys.	6000.00 Sys.
	System 4 Sonata	Inf. Baf. Sat. & Subwoof.	(4)10	(2)5	Domes	(2)1, (4)3	Domes, Piezos	M,T	32-22 ±4	90	30	650,950, 3.5k	4/3	Four Pieces	Oiled Wal.	Black Knit	228 Sys.	3000.00 Sys.
HARMS LABS	Mini	Inf. Baf.	5			1	Dome		70-20 ±2	87	10	3k	8/7	13 x 9 x 6	Wal. Stain	Black Knit	24 Pair	280.00 Pair
	HL1	Pas. Rad.	5			1	Dome		45-20 ±2	87	10	3k	8/7	20 x 10 x 9	Wal. Stain	Black Knit	36 Pair	380.00 Pair
	HL1P	Pas. Rad.	6½			1	Dome		37-20 ±2	90	10	3k	8/7	22 x 10 x 10	Wal. Stain	Black Knit	44 Pair	480.00 Pair
	HL2	Pas. Rad.	8			1	Dome		30-20 ±2	91	10	3k	8/7	24 x 14 x 10	Wal. Stain	Black Knit	70 Pair	580.00 Pair
	HL3	Pas. Rad.	10	6½	Cone	1	Dome		26-20 ±2	90	10	300,3k	8/7	34 x 12 x 13	Wal. Stain	Black Knit	100 Pair	780.00 Pair
	HL4	Pas. Rad. Subwoof. & Sat.	12	(2)6½	Cones	(2)1	Domes		22-20 ±2	94	10	200,3k	8/4	Four Pieces	Wal. Stain	Black Knit	164 Sys.	1200.00 Sys.
	HL5	Pas. Rad. Subwoof. & Sat.	(2)12	(4)5	Cones	(4)1	Domes		18-20 ±2	97	10	150,3k	8/4	Six Pieces	Wal. Stain	Black Knit	230 Sys.	3000.00 Sys.
HARTLEY PRODUCTS	H-100	Air Col.	8	1½	Air Col.	2	Cone	No	50-20 ±4	93	5	2.3k	8/5	11 x 11 x 22	Oiled Wal.	Black Knit	60 Pair	379.95 Pair
	H-200	Air Col.	10	2½	Air Col.	1	Dome	No	35-25 ±3	95	5	2.6k	8/6	15 x 15 x 30	Oiled Wal.	Black Knit	120 Pair	649.95 Pair
	H-300	Air Col.	(2)10	(4)1½	Air Cols.	(2)1	Domes	No	30-25 ±3	96	5	3.4k	4/3	15 x 15 x 43	Oiled Wal.	Black Knit	170 Pair	999.95 Pair
	SPL-1	Air Col.	10	3	Cone	(4)¾	Phsrs.	No	25-25 ±3	95	15	3.8k	8/6	Four Pieces	Oiled Wal.	Black Knit	200 Sys.	1699.95 Sys.
	SW-10	Air Col. Subwoof.	10					No	25-3.8 ±3	93	15		8/6	18 x 18 x 24	Oiled Wal.	Black Knit	70	525.00
	ST-4	Phasor Sat.				(4)¾	Phsrs.	No	3.8k-25k ±2	96	15	3.8k	8/7	5 x 5 x 12	Oiled Wal.	Black Knit	15	190.00
	Concertmaster	Inf. Baf.	18	10	Cone	(2)7	Cones	No	16-25 ±3	92.5	25	250,3k,8k	8/5	29 x 18 x 42	Oiled Wal.	Black Knit	350 Pair	3850.00 Pair
	Reference	Inf. Baf.	24	10	Cone	(2)7	Cones	No	16-25 ±3	93	25	250,3k,8k	8/5	36 x 24 x 50	Oiled Wal.	Black Knit	600 Pair	4995.00 Pair
	SW-18	Inf. Baf. Subwoof.	18					No	16-350 ±4	92.5	25		5/4	29 x 18 x 42	Oiled Wal.	Black Knit	150	950.00
	SW-24	Inf. Baf. Subwoof.	24					No	16-250 ±3	93	25		5/4	36 x 24 x 50	Oiled Wal.	Black Knit	250	1250.00
HECO	SAT 6000	Sat.	4⅛			1	Dome		80-32 ±3	87	60	2.2k	4/	8 x 6 x 5	Black Metal	Black Mesh	5½	150.00
	D-6300	Sat.	4⅛			1	Dome		80-32 ±3	87	50	2k	4/	4 x 8 x 5	Black Metal	Black Mesh	7¼	115.00
	SUB 6000	Powered Subwoof. & Sat. Amp	10					W	25-120		90, 60 Inc.	120		11 x 11 x 12	Black Metal	Black Mesh	22	665.00
	SUB 9000	Powered Subwoof.	12					W	20-150 Adj.		110 Inc.	50-150		17 x 14 x 14	Black Metal	Black Mesh	27½	520.00
	PCX-3	Inf. Baf.	10	2	Dome	1	Dome	No	25-25 ±5	85	20		4/	20 x 12 x 10	Oiled Wal.	Brown Knit	27½	600.00 Pair
	PCX-4	Inf. Baf.	12	4	Dome	1	Dome	No	20-25 ±5	85	20		4/	23 x 14 x 12	Oiled Wal.	Brown Knit	35½	800.00 Pair
	LAB-2	Inf. Baf.	15,8	(3)2	Domes	(4)1, ½	Domes	W,M, ST	20-40 ±5	84	40	200,900, 4k,5k	4/	40 x 16 x 16	Oiled Wal.	Brown Knit	93½	2500.00 Pair

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Superweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
HEYBROOK	HB-3	Inf. Baf.	10	4	Cone	¾	Dome		35-20	89	15	1k,5k	8/6.8	25 x 13 x 12	Opt.	Black Foam	48	898.95 Pair; 1017.95 Pair w/ Stands
	HB-2R	Ref. Port	6½			¾	Dome		36-20	87	15	4k	7/6	16 x 9 x 9	Opt.	Black Foam	20	469.95 Pair; 598.95 Pair w/ Stands
	HB-1	Inf. Baf.	8			1	Dome		42-20	90	10	4k	8/6.8	19 x 12 x 9	Opt.	Black Foam	18	329.95 Pair; 458.95 Pair w/ Stands
HITACHI	HSA-2000	Pas. Rad.	10	4	Cone	2	Cone		45-20	90	35	1k,3k	8/	12 x 32 x 10		Black Knit	22	140.00 Pair
	HSA-3000	Pas. Rad.	10	4	Cone	3	Cone		40-20	90	50	1k,3k	8/	13 x 36 x 11		Black Knit	27	230.00 Pair
	HSA-4000	Pas. Rad.	12	4	Cone	2	Cone		35-20	90	100	1.5k,6k	8/	16 x 40 x 12		Black Knit	44	290.00 Pair
H.L.X.	New 2C	Ported	8			¾	Dome		42-22	92	10	5k	8/8	10 x 10 x 18	Opt.	Brown Knit	40 Pair	140.00 Pair
	22	Ac. Sus.	(2)8			¾	Dome		38-22	92	10	5k	4/4	12 x 12 x 22	Opt.	Brown Knit	52 Pair	200.00 Pair
	5P	Trans. Line	10			2½	Cone		34-22	92	10	4.3k	8/4	12 x 12 x 22	Opt.	Brown Knit	66 Pair	260.00 Pair
	15	Trans. Line	10	5¼	Cone	1	Dome		34-24	92	10	700,5k	8/4	12 x 12 x 24	Opt.	Brown Knit	72 Pair	340.00 Pair
	13	Ported	12	5¼	Cone	1	Dome		30-24	92	10	700,5k	8/4	16 x 12 x 28	Opt.	Brown Knit	84 Pair	400.00 Pair
	Pro-I	Trans. Line	10			2½	Cone		34-22	92	10	1.8k	8/4	11 x 12 x 33	Oak	Brown Knit	96 Pair	400.00 Pair
IMAGED STEREO	Imager		(2)8			1½	Dome		50-16 +1,-4	93	15		4/	15 x 11 x 25	Oiled Wal.	Brown	100 Pair	895.00 Pair w/ Stands
IMPULSE	I	Ported	10			46L	Ribbon	T	30-20 ±2	83	100	175	5/2	Two Pieces per Side	Oiled Wal.	Black Knit	200	5000.00
	II LeF	Inf. Baf.	12			(4)2	Cones		28-22 ±2	88	100	175	4/3	Two Pieces per Side	Oak	Metal	80	2500.00
	III LeF	Inf. Baf.	6			2	Cone		46-22 ±2	88	100	175	4/3	10 x 8 x 14	Oak	Metal	26	2000.00 Pair
INFINITY	RS 5000	Sealed Box	10	3½	Cone	⅜x1⅜	EMIT	M,T	42-32 ±3	89	20	500,5k	6/4	24 x 15 x 12	Oak Vinyl	Black Knit	34	279.00
	RS 4000	Sealed Box	8	3½	Cone	⅜x1⅜	EMIT	T	44-32 ±3	89	20	500,5k	6/4	22 x 12 x 10	Oak Vinyl	Black Knit	30	229.00
	RS 3000	Sealed Box	8			1	Dome		45-22 ±3	89	20	4k	6/4	20 x 12 x 10	Oak Vinyl	Black Knit	28	149.00
	RS 2000	Sealed Box	6½			1⅜	Dome		57-22 ±3	89	15	4.5k	6/4	14 x 9 x 8	Oak Vinyl	Black Knit	14	99.00
	RS 1000	Sealed Box	4½			1⅜	Dome		72-22 ±3	89	8	5.5k	6/4	13 x 8 x 7	Oak Vinyl	Black Knit	9	69.00
	SM 150	Tuned Port	15	(2)4½	Cones	1	Dome	M,T	29-27	101	10	500,5.5k	8/6	40 x 19 x 12	Rswd. Vinyl	Black Knit	80	519.00
	SM 120	Tuned Port	12	4½	Cone	1	Dome	M,T	32-27	98	10	750,5.5k	8/6	33 x 16 x 12	Rswd. Vinyl	Black Knit	64	359.00
	SM 100	Tuned Port	10			1	Dome	T	35-27	98	10	2.5k	8/6	30 x 14 x 12	Rswd. Vinyl	Black Knit	53	239.00
	IRS Series III	Servo	(12)12	(24) 4x6x½	EMIMs	(72) ½x2	EMITs	M,T, ST	16-40 ±2	87	100	70,5k	4/3	Four Pieces	Rswd.	Brown Cloth	1550 Sys.	37,500. Sys.
	RS IB	Servo	(12)8	(14) 4x6x½	EMIMs	(8) ½x2	EMITs	M,T, ST	25-32 ±2	87	75	140,700, 3k,8k	6/4	Four Pieces	Oak	Brown Cloth	348 Sys.	5900.00 Sys.
	RS IIB	Sealed Box	(4)10	(6) 4x6x½	EMIMs	(6) ½x2	EMITs	M,T, ST	29-32 ±2	86	60	150,800, 4k,8k	6/4	48 x 23 x 18	Oak	Brown Cloth	200 Sys.	3400.00 Pair w/EQ
	RS 3B	Sealed Box	(2)10	1½	Dome	½x2	EMIT	M,T	35-32 ±3	88.5	50	600,4k	6/4	48 x 18 x 8	Oak	Brown Cloth	77	749.00
	RS 4B	Sealed Box	(2)8	1½	Dome	½x2	EMIT	M,T	40-32 ±3	88.5	40	600,4k	6/4	42 x 15 x 11	Oak	Brown Cloth	64	559.00
	RS 5B	Sealed Box	10	1½	Dome	½x2	EMIT	M,T	43-32 ±3	88.5	35	600,4k	6/4	25 x 16 x 10	Oak	Brown Cloth	42	439.00
	RS 6B	Sealed Box	8	1½	Dome	½x2	EMIT	M,T	45-32 ±3	88.5	35	600,4k	6/4	22 x 14 x 10	Oak	Brown Cloth	34	319.00
	Infinitesimal III	Sealed Box	4½			½x2	EMIT	T	65-32 ±2	86	15	3.5k	6/4	12 x 7 x 6	Black Metal	Black Metal	12½	199.00
INNOTECH	D24	Trans. Line	(2)5	1½	Dome	1	Dome	No	37-20 ±3	90	25	3.5k,7k	8/5	37 x 11 x 16	Opt.	Black Foam	60	1000.00 Pair
INNOVATIVE TECHNIQUES	ITC 1	Vented Seventh Order	5¼	1½	Dome	1	Dome	M,T	50-18 ±3	86	40	1k,7.5k	8/7	7 x 12 x 8	Opt., Wood	Brown Knit	16	875.00 Pair w/EQ
	ITC 3	Vented Fourth Order	7			¾	Dome	T	48-20 ±3	91	20	4.5k	8/	10 x 10 x 30	Oiled Wal.	Black Knit	19	500.00 Pair

(Continued)

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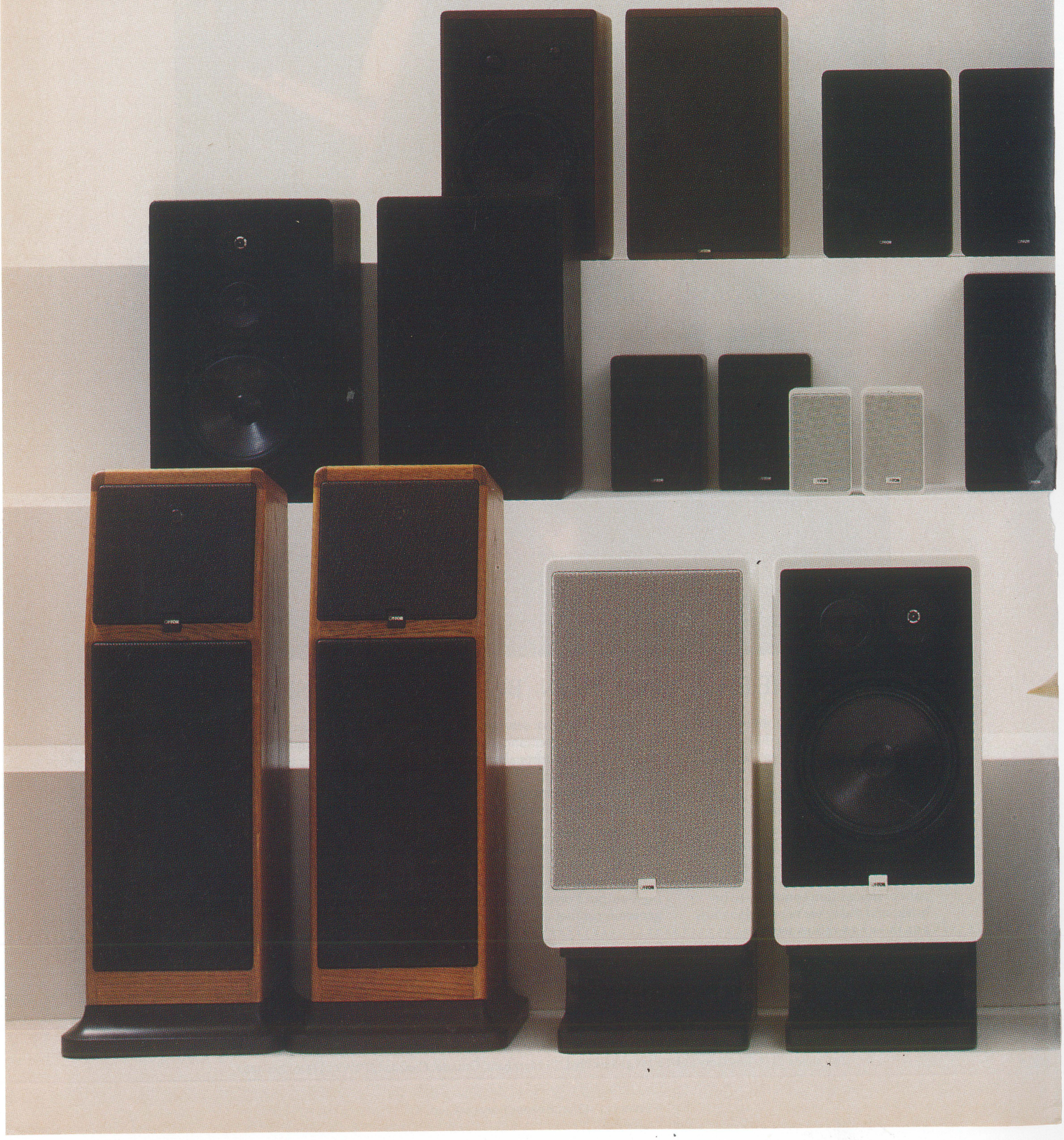

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LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
INNOVATIVE TECHNIQUES (Continued)	The Wall System	Variable Loading	7			¾	Dome		60-20 ±4	90	20	5k	8/	8 x 11 x 4	Black Enam.	Perf. Steel	6½	350.00 Pair
	The Ceiling Speaker	Inf. Baf.	7			¾	Dome		80-16	91	20	6k	8/	19 x 13 x 8	White Enam.	Perf. Steel	26	350.00 Pair
	The Ceiling Woofer	Vented Fourth Order Subwoof.	7						42-100 ±4	91	20	100	8/7	14 x 30 x 8	White Enam.	White Knit	20	350.00 Pair
	ITC 4	Vented Seventh Order Subwoof.	10						24-120 ±2	89	60	120	8/6	18 x 18 x 18	Opt., Wood		50	1300.00 Pair w/ Xover
INTERAUDIO/ BOSE	SA500	Ported	10			3	Cone			90	15	1.3k	8/	22 x 13 x 11	Wal. Vinyl	Brown Knit	45 Pair	549.00 Pair
	SA300	Ported	8			3	Cone			90	15	1.1k	8/	18 x 11 x 9	Wal. Vinyl	Brown Knit	31 Pair	349.00 Pair
	SA200	Ported	6			3	Cone			90	10	1.9k	8/	14 x 9 x 7	Wal. Vinyl	Brown Knit	20½ Pair	289.00 Pair
JAMO	CBR 70	Ported	5½	3	Cone	1	Dome		40-20 ±3	89	20	1.2k,4.6k	8/	19 x 10 x 6	Gray	Black	15.4	199.00
	CBR 90	Ported	6½	4	Cone	1	Dome	T	35-20 ±3	90	20	960,5k	8/	24 x 12 x 10	Gray	Black	24	299.00
	CBR 120	Ported	8	4	Cone	1	Dome	T	28-22 ±3	91.2	20	820,4.9k	8/	28 x 14 x 12	Gray	Black	37.5	399.00
	CBR 200	Ported	10	5	Cone	1	Dome	M,T	25-24 ±3		20	540,3.8k	8/	33 x 16 x 14	Gray	Black	53	599.00
	P166	Ported	8¼			1	Dome		45-20 ±3	91	20	2.5k	8/	17 x 11 x 10	Gray	Black	19.8	159.95
	P266	Ported	8¼	1	Cone	1	Dome		40-20 ±3	92	20	1.4k,4.8k	8/	27 x 13 x 11	Gray	Black	33	259.95
	P366	Ported	9¾	1	Cone	1	Dome	M,T	35-20 ±3	93	20	1.25k,5k	8/	27 x 15 x 12	Gray	Black	48.5	369.95
	P566	Ported	12	1	Cone	(5)1	Domes	M,T	30-20 ±3	94	20	1.2k,3.5k	8/	30 x 18 x 14	Gray	Black	75	589.95
	SL80	Ported	6½		Cone	1	Dome		45-20 ±3	90	20	2.5k	8/	18 x 9 x 8	Gray	Black	9.5	119.00
	SL100	Ported	6½	5	Cone	1	Dome		40-20 ±3	91.5	20	1.5k,4k	8/	21 x 11 x 9	Gray	Black	15.5	139.00
	SL140	Ported	8	5	Cone	1	Dome		36-20 ±3	92	20	1.4k,4k	8/	24 x 12 x 9	Gray	Black	18	179.00
	SL150	Ported	6½		Cone	1	Dome		32-20 ±3	89.5	20	3.8k	8/	33 x 11 x 9	Gray	Black	28.6	229.00
	C50	Ported	4			2			70-20 ±3	89	20	2.6k	4/	7 x 4 x 7	Black	Black	2.9	69.95
	C70	Ported	6½			1	Dome		45-20 ±3	90	20	2.5k	8/	12 x 8 x 9	Black	Black	8.4	84.95
	C90	Ported	8	3¼	Cone	1	Dome		40-20 ±3	91.6	20	1.2k,4k	8/	15 x 9 x 9	Black	Black	11	119.95
JANIS	W1	Slot Loaded Subwoof.	15						30-100 ±1	87	60	100	8/7	18 x 22 x 22	Oiled Wal.	Wood	100	795.00
	System 3	Slot Loaded Subwoof.	12						30-100 ±1	85	50	100	8/7	18 x 18 x 18	Oiled Wal.	Wood	67	550.00
	System 3/A	Powered Slot Loaded Subwoof.	12						30-100 ±1	85	50 Inc.	100	8/7	18 x 18 x 18	Oiled Wal.	Wood	87	850.00
JBL	62	Ducted Port	6½			1	Dome			89	10	3k	8/	10 x 7 x 16	Rswd. Vinyl	Black Cloth	32 Pair	115.00
	82	Ducted Port	8			1	Dome			90	10	3k	8/	14 x 8 x 22	Rswd. Vinyl	Black Cloth	30	165.00
	630	Ducted Port	(2)6½			1	Dome			93	10	400,2.5k	4/	15 x 8 x 36	Rswd. Vinyl	Black Cloth	40	225.00
	830	Ducted Port	(2)8			1	Dome			94	10	400,2.5k	4/	17 x 9 x 40	Rswd. Vinyl	Black Cloth	53	295.00
	940	Ducted Port	8,10	5	Cone	1	Dome			94	10	400,800, 2.5k	4/	19 x 10 x 44	Rswd. Vinyl	Black Cloth	65	395.00
	L20T	Ducted Port	6½			1	Dome			87	10	3k	8/	15 x 9 x 8	Oiled Wal.	Opt., Knit	36 Pair	195.00
	L60T	Ducted Port	8			1	Dome			88	10	2.5k	8/	31 x 12 x 10	Oiled Wal.	Opt., Knit	38	265.00
	L80T	Ducted Port	10	5	Cone	1	Dome			90	10	800,4.5k	8/	34 x 14 x 12	Oiled Wal.	Opt., Knit	53	395.00
	L100T	Ducted Port	12	5	Cone	1	Dome			91	10	800,4.5k	8/	37 x 16 x 13	Oiled Wal.	Opt., Knit	70	525.00
	B460	Subwoof.	18							94	200	Ext.	8/	25 x 38 x 24	Wal.	Brown Knit	125	1700.00
	B380	Subwoof.	15							90	200	Ext.	8/	21 x 27 x 17	Teak	Brown Knit	70	750.00
	LT-1	Ducted Port	5¼			1	Dome			87	10	4k	8/6	10 x 6 x 5	Black Alum.	Black Metal	27 Pair	395.00 Pair
	18Ti	Ducted Port	6½			1	Dome			88	10	3k	8/	15 x 9 x 8	Teak	Brown Knit	35 Pair	295.00
	120Ti	Ducted Port	12	5	Cone	1	Dome	M,T		89	10	900,4k	8/	24 x 14 x 11	Teak	Brown Knit	56	595.00
	240Ti	Ducted Port	14	5	Cone	1	Dome	M,T		89	10	900,4k	8/	37 x 18 x 12	Teak	Brown Knit	85	895.00
	250Ti	Ducted Port	15	8,5	Cones	1	Dome	M,T, ST		90	10	400,1.4k, 5.2k	8/	52 x 22 x 14	Teak	Brown Knit	150	1895.00

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
JENSEN	820	Vented	8			3	Cone		68-21.5	50		3.5k	8/	20 x 11 x 9	Wal. Vinyl	Black Cloth	14½	119.00
	1030	Vented	10	5	Cone	3	Cone		58-21.5	60		3.5k,10k	8/	25 x 15 x 10	Wal. Vinyl	Black Cloth	31	169.00
	1230	Vented	12	5	Cone	3	Cone		56-21.5	70		3.5k,10k	8/	27 x 16 x 11	Wal. Vinyl	Black Cloth	36	199.00
JPW LOUDSPEAKERS	AP3	Inf. Baf.	8			¾	Dome		55-20 ±3	89	10	3.2k	8/6.2	21 x 10 x 12	Opt., Wood	Opt., Knit	53 Pair	499.50 Pair
	AP2	Inf. Baf.	8			¾	Dome		60-20 ±3	89	10	3.2k	8/6.2	17 x 10 x 10	Opt., Wood	Opt., Knit	42 Pair	349.50 Pair
	P1	Inf. Baf.	8			¾	Dome		65-20 ±3	90	10	3.2k	8/6.2	17 x 10 x 10	Opt., Wood	Opt., Knit	34 Pair	299.50 Pair
JRM	Transparency Subwoofer 1A	B4 Vented Subwoof.	18					W	26-250 ±3	91	200	150	8/5	24 x 26 x 37	Opt.	Opt.	150	450.00
	Transparency Subwoofer 1B	QB3 Vented Subwoof.	18					W	25-250 ±3	94	400	150	8/5	19 x 26 x 48	Opt.	Opt.	180	725.00
	Transparency Subwoofer IIA	QB3 Vented Subwoof.	(2)12					W	25-450 ±3	88	300	150	Sel.	24 x 26 x 37	Opt.	Opt.	150	450.00
	Transparency Subwoofer IIB	QB3 Vented Subwoof.	(2)15					W	26-300 ±3	94	300	150	Sel.	20 x 25 x 48	Opt.	Opt.	200	550.00
	Transparency Satellite Tower	Triamped Inf. Baf. Sat.	(12)5	3x26	Horn	1⅞	Horn	W,M, T	80-20 ±3	98	200 (2) 40	150,800, 7k	Sel.	8 x 15 x 50	Opt.	Opt.		1550.00
JS AUDIO	Ultra Mini	Ac. Sus.	5¼			1	Dome		60-20 ±4	90	15	3k	8/	12 x 8 x 7	Wood Lam.	Black	24 Pair	450.00 Pair
	26P	Vented	6½			1	Dome		40-22 ±3	93	15	3k	8/	16 x 10 x 10	Wood Lam.	Black	28 Pair	600.00 Pair
	28P	Ac. Sus.	8			1	Dome		38-22 ±4	92	20	3k	8/	22 x 12 x 8	Wood Lam.	Black	32 Pair	600.00 Pair
	28J	Ac. Sus.	8			1	Dome		50-20 ±5	90	20	2.5k	8/	18 x 10 x 6	Wal. Vinyl	Black	24 Pair	250.00 Pair
	Mesa I	Vented	8			1	Dome		40-22 ±3	92	20	3k	8/	24 x 11 x 12	Wood Lam.	Black	40 Pair	900.00 Pair
	310P	Ac. Sus.	10	5	Cone	1	Dome		40-22 ±3	94	20	700,4k	8/	25 x 14 x 10	Wood Lam.	Black	70 Pair	950.00 Pair
	310J	Ac. Sus.	10	5	Cone	1	Dome		40-20 ±5	89	20	700,4k	8/	29 x 13 x 10	Wal. Vinyl	Black	70 Pair	600.00 Pair
	310N	Vented	10	5	Cone	1	Dome		32-22 ±3	90	15	700,3k	8/	29 x 13 x 10	Wood Lam.	Black	90 Pair	1100.00 Pair
	Panel	Ac. Sus.	10	5	Cone	1	Dome		38-22 ±3	90	30	600,4k	8/	41 x 21 x 7	Wood Lam.	Black	100 Pair	1300.00 Pair
	410P	Vented	10	5	Cone	1,3	Dome, Piezo		38-40 ±3	94	15	700,4k, 10k	8/	25 x 14 x 10	Wood Lam.	Black	80 Pair	1000.00 Pair
	412P	Vented	12	5	Cone	1,3	Dome, Piezo		28-40 ±3	95	15	700,4k, 10k	8/	27 x 16 x 12	Wood Lam.	Black	90 Pair	1200.00 Pair
	313N	Vented	13	5	Cone	1	Dome		30-20 ±3	91	20	600,3k	8/	32 x 15 x 13	Wood Lam.	Black	130 Pair	1500.00 Pair
	Mesa II	Trans. Line	12	3	Dome	1,2	Domes		25-25 ±2	91	40	400,3k, 10k	8/	34 x 12 x 11	Opt.	Opt.	160 Pair	3000.00 Pair
	Shelf Subwoofer	Vented Subwoof.	10						22-120	89	30	120	8/4	25 x 14 x 10	Wood Lam.	Black	40	600.00
	Subwoofer	Vented Subwoof.	15						20-100	91	30	100	4/	30 x 20 x 12	Wood Lam.	Black	78	900.00
	312P	Vented	12	2	Dome	1	Dome		28-30 ±3	94	40	700,4k	8/	32 x 15 x 13	Wood Lam.	Black Knit	130 Pair	1500.00 Pair
	415P	Vented	15	3	Dome	1, (2)3	Dome, Piezos		20-30 ±3	99	30	700,4k, 10k	8/	36 x 20 x 12	Wood Lam.	Black	180 Pair	2800.00 Pair
JSE	.6	Tuned Port	8			1	Dome	No	45-18 ±3	90	10	2.2k	8/5	11 x 13 x 23	Opt.	Black Knit	35	579.00 Pair
	1	Sealed	8	7	Cone	1	Dome	No	35-20 ±2	90	20	300,2.2k	8/5	7 x 14 x 29	Opt.	Black Knit	55	969.00 Pair
	1.8	Sealed	8, (2)10	6	Cone	1	Dome	No	30-20 ±3	90	40	150,2k	8/5	16 x 17 x 38	Opt.	Black Knit	95	1595.00 Pair
	2	Sealed	10, (2)12	2, (2)6	Dome, Cones	¾	Dome	No	25-25 ±3	90	50	150,1k, 4k	8/5	18 x 17 x 45	Opt.	Black Knit	125	2195.00 Pair
JUST SPEAKERS	Bill Reed 6-02A	Bass Ref.	6½			1	Dome		50-20 ±2	86	25		8/6	16 x 10 x 8	Oiled Wal.	Black Knit	20	435.00 Pair
	Avery Dark 10	Inf. Baf.	10	2	Dome	¾	Dome		42-25 ±3	92	50		8/6	25 x 15 x 13	Oiled Wal.	Black Knit	41	815.00 Pair
	Jay Adamson CA-1	Bass Ref.	5¼			1	Dome		60-20 ±3	89	50		8/5.5	12 x 8 x 7	Oiled Wal.	Black Knit	11	290.00 Pair
	Jay Adamson CA-2	Subwoof.	9						38-150 ±3	89	50		8/7	19 x 12 x 11	Oiled Wal.	Black Knit	24	375.00 Pair
	Jack Caldwell MC	Bass Ref.	6½			1	Dome		65-18 ±2	88	30		4/4	16 x 10 x 8	Oiled Wal.	Black Knit	18	420.00 Pair
	Jack Caldwell C-12SW	Inf. Baf. Subwoof.	12						30-150 ±3	90	50		4/4	18 x 18 x 20	Oiled Wal.	Black Knit	55	290.00
	Kimon Bellas KB-One	Bass Ref.	5¼			1	Dome		57-25 ±2	88	25	250,1.8k	4/3.8	12 x 8 x 7	Oiled Wal.	Black Knit	14	500.00 Pair
	Kimon Bellas KB-Two	Bass Ref.	7			1	Dome		51-20 ±2	89.5	20	250,2.8k	4/3.8	16 x 10 x 8	Oiled Wal.	Black Knit	20	575.00 Pair
	Kimon Bellas KB-Three	Bass Ref.	8			1	Dome		37-19	90.5	20	250,3k	4/3.8	25 x 15 x 13	Oiled Wal.	Black Knit	40	675.00 Pair
	Dick Olsher "Dahlia"	Bass Ref.	8			1	Dome		48-20 ±3	89	20		8/	20 x 15 x 12	Oiled Wal.	Black Knit	33	600.00 Pair

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
JVC	SX-A6	Pas. Rad.	8	1¼	Dome	1, (2)3	Dome, Cones	(2)T	25-23	89	50	50,1.2k, 4k,6.5k	6/	15 x 32 x 10	Wal. Vinyl	Gray Knit	38.6	
	SX-A3	Pas. Rad.	8			1	Dome	T	35-23	88	30	2k	6/	14 x 25 x 11	Wal. Vinyl	Gray Knit	31	
KAMA-ISPEAK	Mini	Inf. Baf.	6			1¼	Dome		45-22	89	30	3k	8/6.4	13 x 9 x 9	Opt.	Black Knit	26.4 Pair	660.00 Pair
	Midi	Inf. Baf.	6	1¼	Dome	¾	Dome		40-40	89	35	3k,12k	8/6.4	16 x 9 x 9	Opt.	Black Knit	35.2 Pair	825.00 Pair
	Maxi	Inf. Baf.	8	2¼	Dome	¾	Dome		38-40	92	40	800,5k	8/6.4	21 x 11 x 9	Opt.	Black Knit	56.4 Pair	1050.00 Pair
KEF	Professional KM1	Active	(4)12	(2)4⅜	Cones	2	Dome		38-23 ±2	96	Inc.			30 x 56 x 26	Opt., Wood	Black Knit	308	19,000. Pair
	Reference 107	Coherent Phase	(2)10	4	Cone	1	Dome	W	20-20 ±2	90	50		4/4	46 x 13 x 18	Opt., Wood	Black Knit	99	3900.00 Pair
	Reference 105.2	Coherent Phase	12	5	Cone	1½	Dome		38-22 ±2	85	20	400,2.5k	8/8	38 x 16 x 18	Opt., Wood	Black Knit	80	2400.00 Pair
	Reference 104/2	Coupled Cavity	(2)8	(2)4½	Cones	1	Dome		55-20 ±2	92	25		4/4	35 x 11 x 16	Opt., Wood	Black Knit	71	1750.00 Pair
	Reference 103/3	Coupled Cavity	8	6	Cone	1	Dome	W	50-20 ±2	92	50		4/4	23 x 11 x 13	Opt., Wood	Black Knit	38	1390.00 Pair
	Reference 102	Conjugate Load	6			1	Dome	W	65-20 ±2	92	50		4/4	13 x 9 x 11	Opt., Wood	Black Knit	15	790.00 Pair
	C80	Coupled Cavity	8	6	Cone	1	Dome		38-22 ±3	89	20		4/4	33 x 10 x 12	Opt., Wood	Black Knit	44	1090.00 Pair
	C60	Conjugate Load	8			1	Dome		55-20 ±3	89	20		4/4	19 x 10 x 13	Opt., Wood	Black Knit	27	690.00 Pair
	C40	Closed Box	8	8	Cone	1	Dome		58-20 ±3	91	10		8/8	26 x 10 x 11	Opt.	Black Knit	21	490.00 Pair
	C30	Closed Box	8			1	Dome		60-20 ±3	90	10		8/8	20 x 10 x 9	Opt.	Black Knit	16	350.00 Pair
	C20	Closed Box	8			1	Dome		72-20 ±3	90	10		8/8	14 x 10 x 9	Opt.	Black Knit	12	290.00 Pair
	C10	Closed Box	6			1	Dome		90-20 ±3	88	10		8/8	12 x 9 x 7	Opt.	Black Knit	8	220.00 Pair
KENWOOD	LS-P5000K	Pas. Rad.	10½	4	Cone	(2)2	Domes	W,M, T	22-45	90		1k,5k,10k	8/	14 x 30 x 13	Wal.	Black Cloth	42.9	235.00
	LS-P9000K	Pas. Rad.	8½	4½	Cone	(4)2	Domes		20-45	91		1.5k,5k, 10k	8/	17 x 45 x 13	Wal.	Black Cloth	64.9	410.00
KEVEK LOUDSPEAKER TECHNOLOGY	ES.6	Bass Ref.	6½			¾	Dome		60-20 ±3	88	20	2.5k	8/4	20 x 13 x 8	Oak	Opt., Knit	18	495.00 Pair
	ES.8	Bass Ref.	8			¾	Dome		55-20 ±3	87	20	2.5k	8/4	38 x 15 x 10	Oak	Opt., Knit	31	900.00 Pair
	ES.10	Bass Ref.	10			¾	Dome		50-20 ±3	89	20	2.5k	8/4	42 x 20 x 11	Oak	Opt., Knit	43	1190.00 Pair
	ES.12	Bass Ref.	12	6½	Cone	¾	Dome		30-20 ±3	90	20	150,2.5k	8/4	50 x 22 x 11	Oak	Opt., Knit	55	1790.00 Pair
KINDEL AUDIO	P-50MkII	Q.7 Box	6½			2	Cone	T	50-20 ±3	86	20	2.5k	8/8	8 x 8 x 14	Oak	Black	16	260.00 Pair
	P-100MkII	Q.7 Box	6½	2	Cone	¾	Dome	M,T	50-22 ±3	86	20	1.5k,8k	8/8	9 x 9 x 18	Oak	Black	21	345.00 Pair
	P-200MkII	Q.7 Box	(2)6½	2	Cone	¾	Dome	M,T	40-22 ±3	90	20	300,1.5k, 8k	4/4	10 x 10 x 24	Oak	Black	29	585.00 Pair
	PLS-B	QB3	(4)6½			(8)1	Domes	T	32-20 ±2	90	35	2.5k	8/2	48 x 20 x 8	Oak	Black	85	1195.00 Pair
	PLS-A	QB3	(6)6½			(16)1	Domes	T	32-20 ±2	92	50	2.5k	6/2	64 x 22 x 9	Oak	Black	135	1995.00 Pair
	Phantom	Thiele/ Phase	(2)5½, 8	1½	Dome	½x2½	Ribbon	M,T	38-25 ±2	88	50	1.2k,7k	4/4	42 x 18 x 6	Oak	Black	57	1895.00 Pair
KINERGETICS	Compusound 100	Inf. Baf.	(4)5¼			1	Dome	W,T	30-20 ±2	92	100	2k	8/6	Three Pieces		Opt., Knit	130 Sys.	1295.00 Sys.
	Compusound SW 100	Powered Inf. Baf. Subwoof.	(2)10					W	15-100 ±3	92	Inc.	100	8/6	24 x 11 x 16	Opt.	Opt., Knit	90	995.00 Pair w/Amps
KINETIC AUDIO	Titan	TATL (Tap. Ac. Trap. Line)	(2)12	6½	Cone	2,1,¾	Domes	(2)M, T,ST	12-22 ±1.5	90	35	60,90,350, 3k,7k	6/3	18 x 22 x 60	Oiled Wal.	Black Knit	245	5000.00 Pair
	Trapezium	TATL	12	6½	Cone	2,1,¾	Domes	(2)M, T,ST	12-22 ±1	89	45	90,350, 3.5k,7k	8/5	16 x 20 x 60	Oiled Wal.	Black Knit	205	4000.00 Pair
	Labyrinth	TATL	12	6½	Cone	2,1	Domes	(2)M, T	16-22 ±1.5	91	35	90,350, 3.5k	8/5	16 x 18 x 48	Oiled Wal.	Black Knit	185	3000.00 Pair
	Trapezoid	TATL	12	6½	Cone	1,¾	Domes	M,T, ST	18-22 ±1.5	92	20	90,2k,7k	8/6	16 x 14 x 40	Oiled Wal.	Black Knit	115	2000.00 Pair
	Stat Monitor	TATL	12	6½	Cone		Dome	M,T	18-22 ±1.5	93	15	90,2k	8/6	15 x 14 x 26	Oiled Wal.	Black Knit	95	1000.00 Pair
	Stat Miniature Monitor	TAL (Tap. Ac. Line)	6½			1	Dome	T	38-22 ±2	93	5	2k	8/6	9 x 9 x 15	Oiled Wal.	Black Knit	30	700.00 Pair
	Stat S/W	TATL Subwoof.	12						18-2 ±2	93	15	180,2k	8/6	15 x 14 x 26	Oiled Wal.	Black Knit	80	450.00 Pair
	Trapezoid S/W	TATL Subwoof.	12						16-2 ±1.5	92	25	180,2k	8/6	16 x 14 x 40	Oiled Wal.	Black Knit	95	600.00 Pair
KIRKSAETER	Tower 125	Inf. Baf.	8½	2	Dome	¾	Dome		36-32	93	10	500,5k	8/4	10 x 10 x 33	Gloss Wood	Cloth	35	1149.00 Pair
(Continued)	Tower 140	Inf. Baf.	10	2	Dome	¾	Dome		26-32	94	10	500,5k	8/4	11 x 11 x 37	Gloss Wood	Cloth	45	1399.00 Pair

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Superweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Cloth and Material	Weight, Lbs.	Price, $
KIRKSAETER (Continued)	Tower 260	Inf. Baf.	(2)10	2,4½	Cone, Dome	¾	Dome		23-32	94	10	200,1k, 5k	8/4	11 x 11 x 43	Gloss Wood	Cloth	65	1899.00 Pair
	Monitor 80	Inf. Baf.	8			1	Dome		35-25	93	10	2.7k	8/4	11 x 7 x 18	Opt., Wood	Cloth	22	599.00 Pair
	Monitor 100	Inf. Baf.	8	2	Dome	1	Dome	M,T	28-25	92	10	600,5k	8/4	11 x 7 x 18	Opt., Wood	Cloth	26	799.00 Pair
	Monitor 130	Inf. Baf.	10	2	Dome	1	Dome	M,T	22-25	93	10	600,5k	8/4	12 x 10 x 20	Opt., Wood	Cloth	30	1099.00 Pair
	Monitor 200	Inf. Baf.	12	2	Dome	1	Dome	M,T	20-25	93	10	600,5k	8/4	14 x 11 x 23	Opt., Wood	Cloth	38	1399.00 Pair
	"Satellit"	Ported	4			1	Dome		60-25	88	20	2.8k		5 x 7 x 10	Opt., Wood	Cloth		499.00 Pair
	Subwoofer 500	Active Inf. Baf. Subwoof.	12					W	18-160		Inc.	80,120, 160		15 x 15 x 15	Opt., Wood	Cloth	45	999.00
	Monitor 100	Active Inf. Baf.	8	2	Dome	1	Dome	W,M, T	22-25		Inc.	600,5k		11 x 7 x 18	Opt., Wood	Cloth	30	1599.00 Pair
	Monitor 130	Active Inf. Baf.	10	2	Dome	1	Dome	W,M, T	20-25		Inc.	600,5k		12 x 10 x 20	Opt., Wood	Cloth	35	1999.00 Pair
	Monitor 200	Active Inf. Baf.	12	2	Dome	1	Dome	W,M, T	18-25		Inc.	600,5k		14 x 11 x 23	Opt., Wood	Cloth	43	2299.00 Pair
KLEIN & HUMMEL	0 98	Powered Inf. Baf.	8¼	1½	Dome	¾	Dome		50-16 ±2		Inc.	850,6k		10 x 15 x 7	Enam.	Brown Foam	26.4	1130.00
	0 96	Powered Inf. Baf.	10	2	Dome	¾	Dome		80-12 ±1.5		Inc.	600,4k		12 x 21 x 11	Enam.	Metal	48.4	1950.00
	0 92	Powered Inf. Baf.	(2)10	3½	Cone	1	Dome	T	80-12 ±1.5		Inc.	500,3k		17 x 32 x 12	Enam.	Brown Foam	66	3600.00
KLH	608b	Bass Ref.	8			3	Cone		70-20 ±6	88	10	2.3k	8/6	12 x 10 x 21	Oiled Wal.	Black Knit	17	160.00 Pair
	610b	Bass Ref.	10	5	Cone	3	Cone	T	60-20 ±6	89	10	1.8k,6k	8/6	13 x 11 x 23	Oiled Wal.	Black Knit	24	240.00 Pair
	612b	Bass Ref.	12	5	Cone	3	Cone	M,T	55-20 ±6	92	10	1.8k,6k	8/6	15 x 14 x 26	Oiled Wal.	Black Knit	35	320.00 Pair
	620b	Bass Ref.	(2)10	5	Cone	3	Cone	M,T	55-20 ±6	90	10	2.5k,5k	8/6	13 x 13 x 36	Oiled Wal.	Black Knit	42	420.00 Pair
	862	Bass Ref.	6			1	Dome		50-20 ±6	90	10	2.5k	8/6	14 x 9 x 9	Black Vinyl	Black Knit	13½	238.00 Pair
	882	Ac. Sus.	8			1	Dome		45-20 ±6	89	10	2.5k	8/6	11 x 11 x 18	Black Vinyl	Black Knit	19½	320.00 Pair
KLIPSCH	Klipschorn	Folded Horn	15	2	Horn	1	Horn		35-17 ±5	104	20	400,6k	8/4	52 x 34 x 29	Opt.	Opt.	185	1500.00
	Belle Klipsch	Folded Horn	15	2	Horn	1	Horn		45-17 ±5	104	20	500,6k	8/4	36 x 30 x 19	Opt.	Opt.	133	1210.00
	LaScala	Folded Horn	15	2	Horn	1	Horn		45-17 ±5	104	20	400,6k	8/4	36 x 24 x 25	Birch		130	825.00
	Cornwall II	Bass Ref.	15	1½	Horn	1	Horn		38-20 ±3	101	20	600,6k	8/4	36 x 26 x 16	Opt.	Opt.	100	770.00
	Forté	Pas. Rad.	12	1½	Horn	1	Horn		32-20 ±3	98	20	800,6k	8/4	35 x 12 x 17	Opt.	Opt.	65	550.00
	Heresy II	Inf. Baf.	12	1½	Horn	1	Horn		50-20 ±3	96	20	700,6k	8/4	21 x 16 x 13	Opt.	Opt.	50	415.00
	KG4	Pas. Rad.	(2)8			1	Horn		38-20 ±3	94	30	1.8k	6/4	28 x 11 x 16	Opt.	Opt.	45	295.00
	KG2	Pas. Rad.	8			1	Dhorm		38-20 ±3	90.5	30	1.8k	4/4	19 x 12 x 13	Opt.	Opt.	25	210.00
KOSS	M/80 Plus		4½			1	Dome		50-30					12 x 5 x 5			8	179.95 Pair
LANCER ELECTRONICS	LE50	Vented	6½			¾	Dome		49-19	87	10	3k	4/4	14 x 9 x 9	Oiled Wal.	Black Knit	12	129.50
	LE70	Ac. Sus.	10			1	Dome	T	39-20	90	15	2k	8/6	21 x 13 x 10	Oiled Oak	Black Knit	30	199.50
	LE90A	Vented	10	5	Cone	1	Dome	M,T	28-20	90	25	800,4k	8/6	39 x 14 x 11	Oiled Oak	Black Knit	48	299.50
	LE100A	Vented	12	5	Cone	1	Dome	M,T	36-20	92	25	600,4k	8/6	26 x 15 x 12	Oiled Wal.	Black Knit	45	379.50
	LE200	Vented	10	3	Dome	1	Dome	M,T	27-20	90	25	700,4k	8/6	39 x 16 x 13	Oiled Oak	Black Knit	57	499.50
	LX-20	Vented	8			2	Cone		50-20	90	10	3k	8/6	19 x 11 x 8	Oiled Wal.	Black Knit	19	99.50
	LX-30	Vented	12	5	Cone	2	Cone		38-20	93	10	1.25k,7k	8/6	25 x 14 x 12	Oiled Wal.	Black Knit	34	179.50
LASER AUDIO	R-150 MKV	Bass Ref.	12	4½	Cone	1	Dome		25-20	95	15	1.25k,4.5k	8/4	30 x 16 x 15	Maple	Black Knit	40½	600.00 Pair
	R-100 MKV	Bass Ref.	10	4½	Cone	1	Dome		35-20	93	15	1.25k,4.5k	8/4	30 x 16 x 15	Maple	Black Knit	40½	550.00 Pair
	FXT-10 MKVI	Double Active	(2)10			1	Dome		35-20	94	15	3k	8/4	33 x 13 x 12	Maple	Black Knit	30	600.00 Pair
	FXT-8 MKVI	Double Active	(2)8			1	Dome		40-20	92	15	3.5k	8/4	33 x 13 x 12	Maple	Black Knit	30	550.00 Pair
LINN	DMS Isobarik	Isobarik	(2) 9x12	(2)5	Cones	(2)¾	Domes		25-20 ±3	86	50	375,3k	4/3	17 x 15 x 30	Teak	Black Foam	95	2995.00 Pair
	SARA Isobarik	Isobarik	(2)8			¾	Dome		36-20 ±3	86	35	3k	4/3	17 x 14 x 10	Teak	Black Foam	31	1250.00 Pair
	Kan	Inf. Baf.	5			¾	Dome		70-20 ±3	86	15	3k	8/6	8 x 6 x 12	Teak	Black Cloth	11	525.00 Pair
	Index	Inf. Baf.	8			1	Dome		60-20 ±3	86	10	2k	8/6	17 x 11 x 8	Black	Black Cloth	17	350.00 Pair

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Superweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
MAGNAT	Magnasphere Delta	Inf. Baf.	(6)5¼	2	Sphere	1	Sphere		32-29 ±3	88	30	200,800, 3k	4/	14 x 14 x 44	Gray Lacq.	Black Mesh	65	1245.00
	Magnasphere Gamma	Inf. Baf.	(2)8, (2)5¼	2	Sphere	1	Sphere		32-29 ±3	87	30	400,1.4k, 5k	4/	14 x 14 x 50	Opt.	Black Mesh	67	995.00
	Magnasphere Beta	Inf. Baf.	8,5¼	2	Sphere	1	Sphere		37-29 ±3	87	30	400,1.4k, 5k	4/	13 x 13 x 43	Opt.	Black Mesh	52	795.00
	MSP 300	Inf. Baf.	(2)8	2	Dome	1	Dome		32-29 ±3	87	30	850,5.5k	4/	12 x 11 x 42	Wal.	Black Knit	62	695.00
	MSP 200	Inf. Baf.	8	2	Dome	1	Dome		37-29 ±3	87	30	850,5.5k	4/	12 x 11 x 36	Wal.	Black Knit	52	595.00
	MSP 100	Inf. Baf.	8	2	Dome	1	Dome		41-29 ±3	87	20	850,5.5k	8/	10 x 12 x 20	Wal.	Black Knit	37	445.00
	All-Ribbon 8P	Tuned Port	10	2	Dome	1	Dome		33-29 ±3	89	15	450,4.5k	8/	12 x 14 x 23	Wal	Brown Knit	44	475.00
	All-Ribbon 6	Inf. Baf.	10	2	Dome	1	Dome		37-29 ±3	89	15	600,2.5k	8/4	11 x 12 x 23	Wal.	Brown Knit	37	345.00
	All-Ribbon 4V	Inf. Baf.	8	2	Dome	1	Dome		42-29 ±3	87	15	800,2.5k	8/4	10 x 11 x 20	Wal. Vinyl	Brown Knit	29	250.00
	Monitor D	Inf. Baf.	10	4	Cone	1	Dome		39-29 ±3	88	15	700,2k	8/4	16 x 17 x 25	Black Vinyl	Black Mesh	31	229.90
	Monitor C	Inf. Baf.	8	4	Cone	1	Dome		45-29 ±3	88	15	800,2k	8/4	15 x 14 x 23	Black Vinyl	Black Mesh	22	199.00
	Monitor B	Inf. Baf.	8	4	Cone	1	Dome		52-29 ±3	89	15	800,2k	8/4	14 x 14 x 21	Black Vinyl	Black Mesh	20	169.00
	Monitor A	Inf. Baf.	8	4	Cone	¾	Dome		52-22 ±3	88	15	950,5k	8/4	14 x 14 x 19	Black Vinyl	Black Mesh	18	149.00
MAGNEPAN	Magneplanar SMGa	Planar Mag.	370 Sq. In.			58 Sq. In.	Planar Mag.		50-18 ±4	90	40	2.4k	4/4	19 x 48 x 2	Oak	Opt.	25	535.00 Pair
	Magneplanar MG-Ic	Planar Mag.	428 Sq. In.			68 Sq. In.	Planar Mag.		45-18 ±4	85	40	1.5k	5/5	22 x 60 x 2	Oak	Opt.	35	875.00 Pair
	Magneplanar MG-IIc	Planar Mag.	500 Sq. In.			68 Sq. In.	Planar Mag.		40-18 ±4	84	50	800	5/5	22 x 71 x 2	Oak	Opt.	46	1225.00 Pair
	Magneplanar MG-IIIa	Planar Mag. & Ribbon	620 Sq. In.	170 Sq. In.	Planar Mag.	15 Sq. In.	Ribbon		32-40 ±4	85	50	400,3k	4/4	24 x 72 x 2	Oak	Opt.	52	1995.00 Pair
	Tympani-IVa	Planar Mag. & Ribbon	1254 Sq. In.	135 Sq. In.	Planar Mag.	15 Sq. In.	Ribbon		30-40 ±4	87	100	350,3k	4/4	54 x 72 x 2	Oak	Opt.	106	3800.00 Pair
MAGNUS	A10	Vented	10			2¾x 4½	Horn		45-20	91	10	4k	6/	23 x 13 x 12	Wood Vinyl	Brown Cloth	26	159.95
	A11	Vented	10	6	Cone	2¾x 4½	Horn	M,T	40-20	92	10	500,4k	6/	23 x 13 x 12	Wood Vinyl	Brown Cloth	27	199.95
	A12	Vented	12	6	Cone	2¾x 4½	Horn	M,T	35-20	93	10	500,4k	6/	26 x 16 x 12	Wood Vinyl	Brown Cloth	35	249.95
	A24	Vented	(2)12	6	Cone	2¾x 4½	Horn	M,T	33-20	93	10	500,4k	6/	41 x 17 x 11	Wood Vinyl	Brown Cloth	54	349.95
MAN	MPS-1	Trans. Line	5			⅜	Dome		35-20 ±3	90		10k	4/3		Opt., Wood	Black Foam	20	1190.00 Pair
MARANTZ	HLM208A	Ported	8			2	Cone		80-20	90			4/	19 x 11 x 8	Wood Vinyl	Black Knit		60.00
	SP800	Ported	8	4	Cone	2	Cone		70-20	89			8/	26 x 13 x 9	Wood Vinyl	Black Knit	16.4	75.00
	SP1000	Ported	10	4	Cone	3	Cone		40-20	89			8/	27 x 13 x 11	Wood Vinyl	Black Knit	25.4	120.00
	SP1200	Ported	12	4	Cone	3	Cone		25-20	90			8/	30 x 15 x 12	Wood Vinyl	Black Knit	32.4	150.00
	SP1515	Ported	15	5	Cone	3	Cone		18-20	90			8/	33 x 18 x 17	Wood Vinyl	Black Knit	47.4	200.00
MARIAH ACOUSTICS	Thimble	Ac. Sus.	6½			1	Dome		55-20 ±3	90	20	2.5k	8/	10 Dia. x 16	Oak	Opt., Knit	34 Pair	248.00 Pair
	LS #4II	Ac. Sus.	8			1	Dome		45-20 ±3	91	20	2k	4/	12 Dia. x 23	Oak	Opt., Knit	48 Pair	328.00 Pair
	LS #3II	Bass Ref.	10			1	Dome		38-20 ±2.5	87	30	1.8k	8/	14 Dia. x 36	Oak	Opt., Knit	42	548.00 Pair
	LS #2II	Bass Ref.	(2)8			1	Dome		35-20 ±2.5	88	30	2.2k	8/	14 Dia. x 38	Oak	Opt., Knit	48	798.00 Pair
MARTIN-LOGAN	The Monolith	ES & Subwoof.	12				ES		27-22 ±2	90	50	100	/6	26 x 12 x 74	Lacq. Oak	Black Knit	165	4850.00 Pair
	The CLS	Dipole ES							45-22 ±2	87	50		6/3	26 x 2 x 56	Lacq. Oak	None	65	2580.00 Pair
MASTERCRAFT AUDIO	Sound Panels SP-MK 1	Ac. Sus.	8			1	Dome	T	40-22 ±3	91	30	3.1k	8/	12 x 6 x 26	Opt.	Black Knit	58 Pair	729.00 Pair
	Sound Panels SP-MK 2	Ac. Sus.	(2)8			1,¼	Dome, Piezo	T	37-27 ±3	93	30	3k	4/	30 x 15 x 8	Opt.	Black Knit	88 Pair	1069.00 Pair
	Black Box	Ac. Sus.	8			1	Dome	T	45-22 ±3	91	30	3.1k	8/	14 x 10 x 8	Opt.	Black Knit	48 Pair	599.00 Pair
	Music Monitor—Large	Ac. Sus.	10			1	Dome		38-21 ±3	94	15	2.5k	8/	15 x 26 x 11	Oak	Black Knit	60 Pair	469.00 Pair
	Music Monitor—Small	Ac. Sus.	8			2	Cone		50-20 ±3	92	10	2.8k	8/	14 x 10 x 8	Oak	Brown Knit	34 Pair	259.00 Pair
	SW-1	Ac. Sus. Subwoof.	12					W	28-90 ±3	89	50	90	8/	30 x 15 x 10	Black Oak		42	469.00

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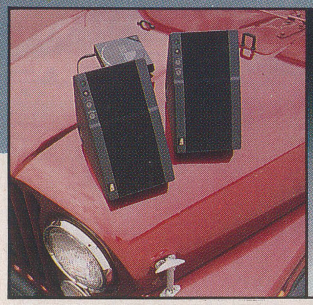

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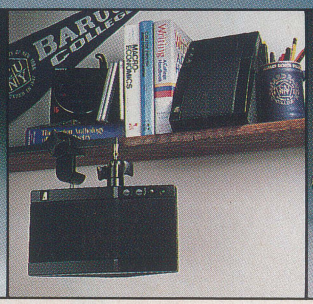

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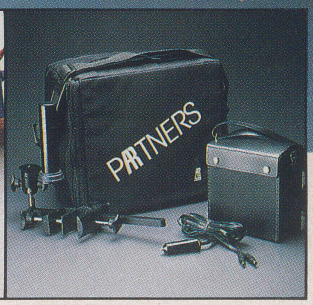

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For those of you who have wanted to listen to *high quality* sound both in and out of the listening room, your wait is over. AR's new Powered Partners™ stereo loudspeakers are unlike *any* portable or transportable speakers to date. They feature an individual powerful amplifier, a 4" woofer and 1" tweeter in each impact-resistant, black crackle, cast aluminum enclosure. They also feature individual volume and tone controls, inputs for anything from an FM or cassette Walkman™ or Stereo TV Receiver to the latest portable CD players. A battery pack, DC adaptor, and carrying case featuring Music Windows with Velcro™ closures, are optional touches of perfection.

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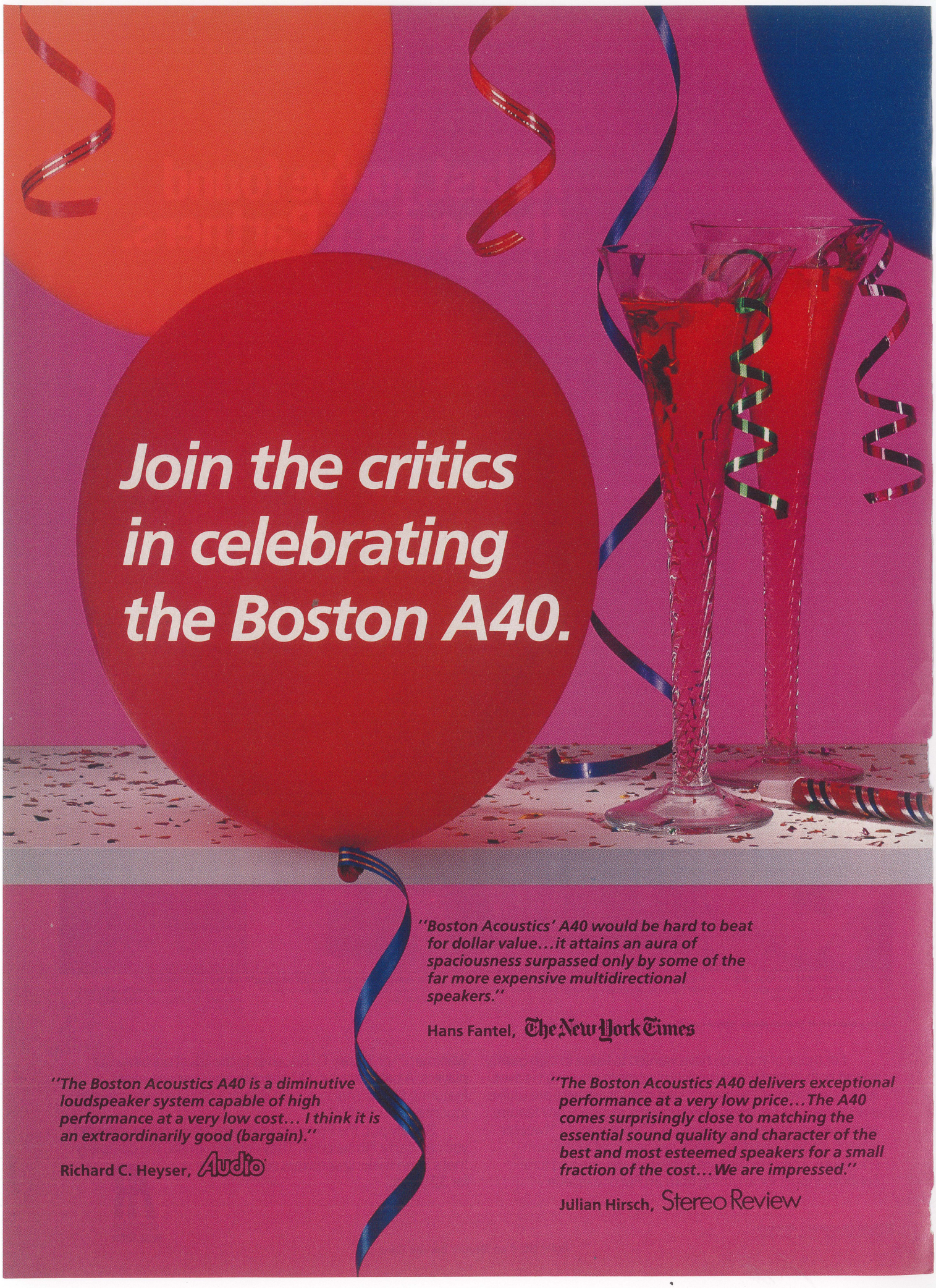

"Boston Acoustics' A40 would be hard to beat for dollar value...it attains an aura of spaciousness surpassed only by some of the far more expensive multidirectional speakers."

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Richard C. Heyser, Audio

"The Boston Acoustics A40 delivers exceptional performance at a very low price...The A40 comes surprisingly close to matching the essential sound quality and character of the best and most esteemed speakers for a small fraction of the cost...We are impressed."

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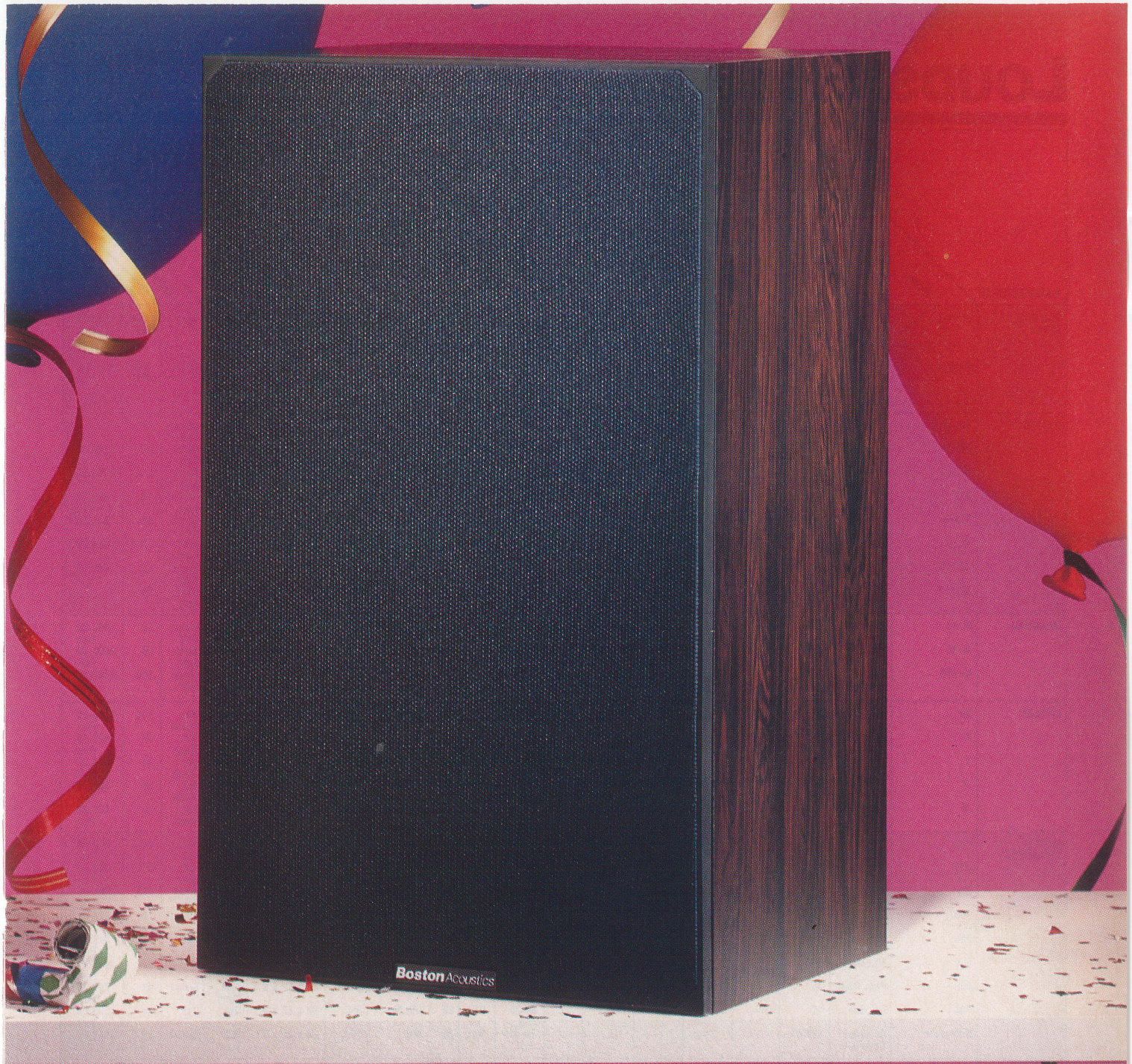

"Even the most lively compact disc was taken in stride...astonishing clarity and realism... This is the best speaker in its class."

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Critics around the world raved about the original Boston A40 stereo speaker system. They liked its extraordinary combination of renowned Boston Acoustics sonic quality and remarkable value.

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BostonAcoustics

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
MAVRICK AUDIO	MAM I	Powered Concrete Horn	60x60	(10) 4½x17	ES		Helium Plasma	W,M	12-100 ±2		Inc.	60,700		Fourteen Pieces w/Six Amps & Preamp	Opt.	Opt.	5000 Sys.	110,000. Sys.
	MAM II	Powered Modified Trans. Line	15	6	Cone		Helium Plasma		18-100 ±3		Inc.	60,700		Eight Pieces w/Four Amps	Opt.	Opt.	600 Sys.	14,000. Sys.
McINTOSH	XR1052	Pas. Rad.	10	5	Cone	1	Dome	M,T		82		55,450, 1.3k	8/	47 x 16 x 11	Wal.	Black Knit	83	
	XRT18	Inf. Baf.	12	6	Cone	(16)1	Domes			86		150,250, 1.5k	8/	Two Pieces per Side	Wal.	Black Knit	92	2250.00
	XRT22	Inf. Baf.	(2)12	8	Cone	(23)1	Domes			87		150,250, 1.5k	8/	Two Pieces per Side	Wal.	Black Knit	215	3750.00
	XL1	Inf. Baf.	6			1	Dome			85		1k	8/	13 x 8 x 7	Wal.	Black Knit	15	525.00 Pair
	XL1W	Inf. Baf. Subwoof.	12							85		90	8/	28 x 18 x 12	Wal.	Black Knit	55	549.00
	XL10	Pas. Rad.	8			1	Dome			89		90,1k	8/	25 x 14 x 8	Wal.	Black Knit	27½	429.00
	XD715	Inf. Baf.	10	5	Cone	1	Dome			87		375,1k	8/	30 x 15 x 10	Wal.	Black Knit	50	599.00
	XD717	Inf. Baf.	12	6½	Cone	1	Dome			86		375,1k	8/	38 x 18 x 11	Wal.	Black Knit	70	
MERIDIAN	M-30	Powered	6			1½	Dome		38-20 ±3		Inc.		22k	7 x 15 x 12	Black Ash	Black Knit	15	1500.00 Pair
	M-20	Powered	(2)4			1½	Dome		35-20 ±3		Inc.		22k	7 x 15 x 20	Black Ash	Black Knit	38	2000.00 Pair
	M-100	Powered Pas. Rad.	(4)4	(2)4	Cones	1½	Dome		33-20 ±3		Inc.		22k	17 x 41 x 19	Black Ash	Black Knit	100	5500.00 Pair
MERLIN	3b	Bass Ref.	8	4	Cone	1¼	Dome	M,T	33-32 ±3	90	30	500,2.1k	8/6.2	13 x 16 x 44	Opt.	Opt., Foam	100	1795.00 Pair
	2	Bass Ref.	8			1¼	Dome	T	33-32 ±3	88	30	2k	8/6.2	12 x 12 x 42	Opt.	Opt., Foam	47	1095.00 Pair
	1	Bass Ref.	6½			1¼	Dome	T	38-32 ±3	89	30	2.3k	4/3.8	10 x 10 x 36	Opt.	Opt., Foam	36	695.00 Pair
	.7	Inf. Baf.	6			1¼	Dome	T	45-32 ±3	86	30	2.3k	8/6.2	10 x 10 x 19	Opt.	Opt., Foam	24	550.00 Pair
	.5	Bass Ref.	6			1	Dome	T	58-22 ±3	88	30	2.8k	8/4.7	10 x 10 x 19	Opt.	Opt., Foam	24	430.00 Pair
MIRAGE ACOUSTICS	250	Ac. Sus.	8			1	Dome		60-20 ±3	90	15	4k	8/4	16 x 12 x 7	Wal. Vinyl	Opt., Knit	14	240.00 Pair
	450	Ac. Sus.	8			1	Dome		56-20 ±2	90	15	4k	8/4	24 x 12 x 9	Opt., Vinyl	Opt., Knit	25	350.00 Pair
	M1	Ported Bipolar	(2)8	(2)4	Cones	(2)¾	Domes		25-20 ±2	86	40	300,2.2k	6/4	60 x 19 x 9	Oak Ven.	Black Knit	120	2000.00 Pair
	200	Ac. Sus.	6½			¾	Dome		60-20 ±3	89	10	5k	8/4	17 x 10 x 8	Wal. Vinyl	Brown	28 Pair	229.00 Pair
	350	Ac. Sus.	8			1	Dome		59-20 ±3	92	10	4k	4/4	18 x 12 x 9	Opt.	Opt.	48 Pair	299.00 Pair
	550	Ac. Sus.	10			1	Dome		49-20 ±3	90	15	4k	6/4	32 x 12 x 9	Wal. Vinyl	Brown	43	449.00 Pair
	650	Pas. Rad.	10			1	Dome		44-20 ±3	90	20	4k	8/4	32 x 12 x 9	Wal. Vinyl	Brown	44	549.00 Pair
	750	Ac. Sus.	10	5¼	Cone	¾	Dome		39-20 ±3	91	25	300,5k	8/4	32 x 12 x 9	Opt.	Opt.	44	599.00 Pair
	Subwoofer	Ac. Sus. Subwoof.	(2)10						36-300 ±3	92	20	300	10/6	20 x 25 x 15	Wal. Vinyl	Brown	67½	449.00
MISSION ELECTRONICS	70 II	Inf. Baf.	7			¾	Dome		60-20 ±3	89	20	2.7k	8/6	14 x 8 x 8	Black	Black Knit		249.00 Pair
	700 LE	Inf. Baf.	7			¾	Dome		55-20 ±3	90	20	3.1k	8/6	15 x 8 x 8	Opt.	Black Knit		349.00 Pair
	707	Port	8			¾	Dome		50-20 ±3	92	20	2.2k	8/6	19 x 10 x 11	Opt.	Black Knit		499.00 Pair
	737 Renaissance	Port	8			¾	Dome		45-20 ±3	90	35	2.4k	8/6	21 x 10 x 11	Opt., Wood	Black Knit		699.00 Pair
	770 Freedom	Port	8			1	Dome		35-20 ±3	92	30	2.1k	8/6	24 x 11 x 12	Opt., Wood	Black Knit		999.00 Pair
	780 Argonaut	Inf. Baf.	(2)8			1			35-20 ±3	94.5	50	1.8k	4/3	37 x 11 x 12	Opt., Wood	Black Knit		1500.00 Pair
M & K	S1B	Ac. Sus. Sat.		(2)5	Cones	(2)1	Domes	M,T	65-22 ±3	96	7.5	2k	4/4	21 x 8 x 8	Opt., Wood	Black Knit	18	695.00 Pair
	S2B	Ac. Sus. Sat.		6½	Cone	1	Dome	M,T	65-22 ±3	93	10	2k	4/4	13 x 9 x 8	Opt., Wood	Black Knit	15	525.00 Pair
	S3B	Ac. Sus. Sat.		5	Cone	1	Dome	M,T	85-22 ±3	93	10	2k	4/4	11 x 7 x 7	Opt.	Black Knit	9	425.00 Pair
	SX4	Ac. Sus. Sat.		(2)5	Cones	(2)1	Domes	M,T	65-22 ±3	96	7.5	2k	4/4	20 x 8 x 7	Opt.	Black Knit	14	475.00 Pair
	SX7	Ac. Sus. Sat.		4	Cone	¾	Dome		100-20 ±3	87	5	2k	4/4	8 x 5 x 5	Black Metal	Perf. Metal	6	220.00 Pair
	V1B	Powered Ac. Sus. Subwoof.	12					W	20-125 ±3		Inc.	50-125	600	18 x 19 x 17	Opt., Wood	Black Knit	50	800.00
	V2B	Powered Ac. Sus. Subwoof.	12					W	24-125 ±3		Inc.	50-125	600	18 x 19 x 17	Opt., Wood	Black Knit	43	650.00
	V3B	Powered Ac. Sus. Subwoof.	12					W	24-125 ±3		Inc.	50-125	600	18 x 18 x 15	Black	Black Knit	38	550.00

(Continued)

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Superweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Cloth and Material	Weight, Lbs.	Price, $
M & K (Continued)	VX4	Powered Ac. Sus. Subwoof.	12					W	30-125 ±3		Inc.	50-125	600	19 x 18 x 14	Opt.	Black Knit	38	400.00
	VX7	Powered Ac. Sus. Subwoof.	8					W	40-180 ±3		Inc.	90-180	600	12 x 10 x 10	Black Vinyl	Black Knit	21	330.00
MONDIAL	8 MKII	Pas. Rad.	9	6	Cone	5x24	Ribbon		30-27 ±3.5	89	50	100,1.5k	6/8	20 x 14 x 50	Opt., Wood	Black Foam	98	1590.00 Pair
	6	Trans. Line	9	4½	Cone	1x3	Ribbon		28-40 ±3	88	30	800,4k	6/8	12 x 19 x 38	Opt., Wood	Black Foam	70	690.00 Pair
MORDAUNT-SHORT	MS-10	Bass Ref.	4½			½	Dome		90-20 ±3	87	5		8/7	11 x 8 x 7	Black	Black Cloth	8	170.00 Pair
	MS-15	Inf. Baf.	6½			½	Dome		80-20 ±3	87	10	4.5k	8/7	13 x 9 x 7	Black	Black Cloth	11	200.00 Pair
	MS-25Ti	Inf. Baf.	8			¾	Dome		70-20 ±3	89	10	3.5k	8/7	16 x 10 x 9	Opt.	Black Cloth	15	250.00 Pair
	MS-35Ti	Bass Ref.	8			¾	Dome		60-20 ±3	89	10	3.5k	8/7	20 x 10 x 11	Opt.	Black Cloth	18	300.00 Pair
	MS-40	Bass Ref.	8			¾	Dome		70-15 ±3	87	15	3.5k	8/6	21 x 10 x 9	Sim. Wal.	Brown Cloth	21	375.00 Pair
	MS-55Ti	Inf. Baf.	(2)8			¾	Dome		50-20 ±3	90	10	3.5k	8/7	33 x 10 x 12	Opt.	Black Cloth	40	650.00 Pair
MOREL ACOUSTICS	CR-7	Ac. Sus.	6			1.1	Dome		70-25 ±3	90	15	1.6k	6/4	7 x 11 x 7	Black	Mesh	10	395.00 Pair
	MLP-201	Ac. Sus.	9			1.1	Dome		40-20 ±3	90	10	1.5k	8/6.3	10 x 16 x 10	Opt.	Black Cloth	16	285.00 Pair
	MLP-202II	Ac. Sus.	6			1.1	Dome		60-28 ±3	89	15	1.6k	6/4	8 x 13 x 10	Opt.	Black Cloth	14	440.00 Pair
	MLP-307	Vented	(2)9			1.1	Dome		33-25 ±3	91	15	300,1.8k	8/6.3	14 x 24 x 13	Wal.	Black Cloth	32	600.00 Pair
	MLP-403II	Vented	9	3	Dome	1.1	Dome		38-25 ±3	90	20	500,5k	6.4/4	21 x 12 x 10	Opt.	Black Cloth	26	675.00 Pair
	MLP-206	Ac. Sus.	9			1.1	Dome		38-25 ±3	89	20	2.2k	8/6.3	12 x 20 x 12	Opt.	Black Cloth	25	575.00 Pair
MTX	PRO115	Vented	15	(2)5	Cones	3	Horn		60-21	96.6	15	2k,5k	8/	21 x 30 x 16	Gray Cptg.	Black Steel	77	450.00
	PRO210	Vented	(2)10	(2)5	Cones	3	Horn		70-21	98.6	15	2k,5k	8/	23 x 18 x 13	Gray Cptg.	Black Steel	64	350.00
	PRO215	Vented	(2)15	(2)5	Cones	3	Horn		50-21	99.2	15	2k,5k	8/	19 x 47 x 16	Gray Cptg.	Black Steel	125	600.00
MUSIC & SOUND	MAS 925 III	Pas. Rad.	8			(2)¾	Domes	No	30-22 ±3	91	20	3.3k,11k	8/5	12 x 12 x 24	Oak Ven.	Brown Cloth	38	699.00 Pair
NAD	8100	Powered Ac. Sus.	5			¾	Dome	T	60-20 ±3		45 Inc.	2k	47k	19 x 7 x 10	Black	Black Cloth	18.3	
	20	Ac. Sus.	8			1	Dome	No	35-25	88	10	2.5k	4/3.2	31 x 9 x 10	Black	Black Cloth	24	448.00 Pair
	30	Ac. Sus.	10	1½	Cone	1	Dome	No	30-25	88	10	700,5k	4/3.2	32 x 11 x 12	Black	Black Cloth	34.8	698.00 Pair
NADY SYSTEMS	W-2	Wireless	6½			1¼			40-15	60	15			9 x 13 x 8	Vinyl	Black	10	99.95
NEC	RS-500	Ac. Sus.	12	5	Cone	1	Dome		40-20 ±4	92	15	2.2k,7k	8/5	14 x 27 x 11	Oak Vinyl	Black	35	499.00 Pair
	RS-100	Trans. Line	(2)8	1⅜	Dome	1	Dome		28-18.5 ±3	90	25	2k,8.5k	4/	14 x 16 x 42	Oak	Brown Knit	103	1500.00 Pair
NELSON-REED	5-02	Inf. Baf.	5¼			¾	Dome		60-20 ±3	84	30	3.3k	8/6	12 x 8 x 6	Oiled Wood	Opt., Knit	12	520.00 Pair
	6-02/B	Ported	6½			¾	Dome		40-20 ±3	84	30	3.3k	8/6	19 x 12 x 10	Oiled Wood	Opt., Knit	25	620.00 Pair
	SW1201	Subwoof.	12						32-120 ±3	84	30	120	8/6	18 x 18 x 18	Oiled Wood	Opt., Knit	45	570.00
	TW1202	Inf. Baf. Subwoof.	12						32-120 ±3	84	30	120	8/6	25 x 14 x 12	Oiled Wood	Opt., Knit	40	870.00 Pair
	8-04 Pro	Slot Loaded	(2)8	3	Dome	¾	Dome		32-20 ±3	90	30	300,6k	4/3	39 x 12 x 15	Oiled Wood	Opt., Knit	92	2850.00 Pair
	8-03 Reference	Slot Loaded	10	4	Cone	¾	Dome		32-20 ±3	90	30	300,5.5k	4/3	38 x 12 x 15	Oiled Wood	Opt., Knit	55	1850.00 Pair
	8-02 Standard	Slot Loaded	8	4	Cone	¾	Dome		32-20 ±3	90	30	300,5.5k	4/3	36 x 12 x 15	Oiled Wood	Opt., Knit	68	1190.00 Pair
	1204	Inf. Baf. Subwoof.	(4)12						16-65 ±3			65	8/6	39 x 18 x 18	Oiled Wood	Opt., Knit	120	1200.00
	8-04/1204	Sat. & Subwoof.	(2)8, (4)12	3	Dome	¾	Dome		16-20 ±3	90		65,300, 6k	4/3	Three Pieces	Oiled Wal.	Opt., Knit		
NESTOROVIC LABS	Type 5AS Mk. II	Nestorovic	8,10	4	Dome/ Cone	4½	Planar	M,T	28-40 +1,-3	91	50	1k,7k	8/5	36 x 15 x 15	Opt., Wood	Black Knit	75	2500.00 Pair
	Type 4A	Sat.	8	4	Cone	4½	Planar		60-40 +1,-3	92	50	200,1k, 7k	8/6	22 x 12 x 12	Opt., Wood	Black Knit	40	2400.00 Pair
	Type 8	Nestorovic Subwoof.	(2)12						18-250 +1,-3	92	75	250 Max.	8/5	22 x 26 x 26	Opt., Wood	Black Knit	125	1450.00
	System 12A	Sat. & Nestorovic Subwoof.	(2)8, (4)12	(2)4	Cones	(2)4½	Planars		18-40 +1,-3	92		200,1k, 7k	8/5	Four Pieces	Opt., Wood	Black Knit	330 Sys.	5300.00 Sys.
	System 16A	Sat. & Nestorovic Subwoof.	(4)8, (4)12	(4)4	Cones	(4)4½	Planars		18-40 +1,-3	92		200,1k, 7k	8/5	Six Pieces	Opt., Wood	Black Knit	410 Sys.	7700.00 Sys.

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Superlweeter=ST	Anechoic Frequency Response, Hz to kHz, ± dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
NEW YORK ACOUSTICS	Nova	Push-Pull	(2)5		Ribbon		Leaf		50-60 ±3	87	40	800,12k	4/4	12 x 10 x 44	Opt., Wood	Black Knit	38	2295.00 Pair
	Phoenix	Bass Ref.	10	4	Cone	1	Dome		32-25 ±3	89	30	600,3k	8/6	12 x 15 x 42	Opt., Wood	Black Knit	65	1795.00 Pair
	8.2	Bass Ref.	8			1	Dome		38-25 ±3	89	20	3k	8/6	12 x 10 x 31	Opt., Wood	Black Knit	42	750.00 Pair
	6.2	Bass Ref.	6½			1	Dome		42-25 ±3	89	20	3k	8/6	12 x 10 x 19	Opt., Wood	Black Knit	25	550.00 Pair
	PS-1	Bass Ref.	4			1	Dome		50-25 ±3	88	20	3k	8/6	6 x 9 x 12	Oiled Oak	Black Knit	10	395.00 Pair
NIKKO	DRM-3000	Inf. Baf.	12	5	Cone	3	Cone				5		8/8		Wood Grain	Black	43	200.00 Pair
NOBIS	DM-2st	Ported	(2)6			1	Dome		33-20 ±3	91	35	3k	4/3.6	9 x 13 x 40	Oak	Brown Knit	56	1550.00 Pair
	DM-3t	Ported	(2)6			1	Dome		33-20 ±3	91	35	3k	4/3.6	9 x 11 x 47	Oak	Brown Knit	51	1100.00 Pair
	DM-5	Ported	6			1	Dome		33-20 ±3	90	35	3k	4/3.6	9 x 13 x 21	Oak	Brown Knit	25	650.00 Pair
	DM-7	Ac. Sus.	6			1	Dome		55-20 ±3	89	35	3k	4/3.6	9 x 9 x 15	Oak	Brown Knit	18	450.00 Pair
NONSPEAKER	Ribbon Monitor Series II	Pressure Release	6				Ribbon		38-40 ±3	92	25	2k	6/4	8 x 13 x 17	Oak		22	1250.00 Pair
	Subwoofer	Pressure Release Subwoof.	12						22-100 ±3	92	50	100	4/4	25 x 12 x 18	Oak		50	750.00
	Ribbon Reference I	Ac. Environ.	15	6	Cone		Ribbons		18-40 ±3	92	50	85,2k	6/4	30 x 18 x 60	Beige	Cloth	105	5000.00 Pair
	Ribbon Reference II	Ac. Environ.	15	6	Cone		Ribbon		18-40 ±3	92	50	85,2k	6/4	30 x 18 x 60	Beige	Cloth	100	4000.00 Pair
	Ribbon Reference III	Trans. Line					Ribbon		35-40 ±3	92	25		6/4	11 Dia. x 60		Beige	55	1950.00 Pair
NORMAN LABS	52	Ac. Sus.	6½			1	Dome		75-18 ±3	87	15	2.5k	8/7	12 x 8 x 6	Opt., Wood	Brown Knit	25 Pair	260.00 Pair
	62	Ac. Sus.	8			1	Dome		75-18 ±3	90	15	2.5k	8/7	16 x 10 x 8	Opt., Wood	Brown Knit	40 Pair	340.00 Pair
	82	Ac. Sus.	10			1	Dome		70-18 ±3	91	15	2.5k	8/7	23 x 12 x 9	Opt., Wood	Brown Knit	60 Pair	410.00 Pair
	83	Ac. Sus.	10	5¼	Cone	1	Dome		70-18 ±3	90	15	2k,4.5k	8/5	23 x 12 x 9	Opt., Wood	Brown Knit	52 Pair	510.00 Pair
	332	Ac. Sus.	10	5¼	Cone	1	Dome		55-18 ±3	92	15	2k,4.5k	8/5	32 x 13 x 9	Opt., Wood	Brown Knit	86 Pair	800.00 Pair
	432	Ac. Sus.	(2)10	5¼	Cone	1	Dome		50-18 ±3	93	15	600,2k, 4.5k	6/4	44 x 15 x 9	Opt., Wood	Brown Knit	120 Pair	1000.00 Pair
	632	Ac. Sus.	(3)10	5¼	Cone	1	Dome		45-18 ±3	93	15	300,2k, 4.5k	4/3	50 x 17 x 11	Opt., Wood	Brown Knit	150 Pair	1500.00 Pair
NOVAK	2	Ported	6½			¾	Dome		45-24 ±3	91.5	5		4/	21 x 11 x 10	Opt., Wood	Black Foam	22	300.00 Pair
	2B	Ported	6½			¾	Dome		45-24 ±3	91.5	5		4/	21 x 11 x 10	Black Lam.	Black Foam	22	330.00 Pair
NUMARK	MSS 315C	Bass Ref.	15	3¼x9¾	Horn	1	Dome	No	45-16 ±3	96	15	2.5k,10k	8/4	19 x 16 x 32	Gray Cptg.	Black Steel	60	1000.00 Pair
	DMS 2.0	Bass Ref.	6½			1	Dome	T	52-17 ±3	91	10	2.5k	8/6	15 x 11 x 11	Wal.	Black Knit	19	500.00 Pair
	DMS 312C	Bass Ref.	12	6½	Cone	1	Dome	No	41-17 ±3	92	10	500,5k		32 x 17 x 14	Cptg.	Black Metal	70	1100.00 Pair
OHM ACOUSTICS	Walsh 5	Walsh Cone							25-25 ±4	90	50		4/	18 x 18 x 43	Opt., Wood	Opt.	95	4800.00 Pair
	Walsh 4	Vented	10				Dome	W,T	32-17 ±4	87	50		8/6		Opt.	Brown Knit	126 Pair	1895.00 Pair
	Walsh 3	Vented	8				Dome	W,T	39-16 ±4	87	35		8/6		Opt.	Brown Knit	96 Pair	1395.00 Pair
	Walsh 2	Vented	8				Dome	W,T	45-16 ±4	87	30		4/4		Opt.	Black Knit	58 Pair	995.00 Pair
	Walsh 1	Vented	8				Dome		48-18 ±4	87	20		8/6		Wal.	Black Knit	48 Pair	595.00 Pair
	C3	Vented	10			(2)1, 1½	Domes, Cone	T,ST	37-21		15	2.5k,7k	4/4	26 x 15 x 12	Opt.	Black Knit		750.00 Pair
	L2	Vented	8			2	Cone	T,ST	42-20		8	2.5k,7k	8/4		Oiled Wal.	Black Knit		520.00 Pair
	E2	Vented	8			2	Cone	T	48-17		7	2.5k	8/4	22 x 12 x 7	Oiled Wal.	Black Knit		300.00 Pair
OMNI SOUND	TCM I	Vented	6½			1	Dome	No	72-22 ±3	90	20	3.5k	4/3.5	8 x 9 x 13	Vinyl Lam.	Black Knit	22	500.00 Pair
	TCM II	Vented	8			1	Dome	No	55-22 ±3	92	20	3.5k	8/7	12 x 12 x 20	Vinyl Lam.	Black Knit	34	560.00 Pair
	TCM III	Vented	8			1	Dome	No	38-22 ±3	92	20	3.5k	8/7	13 x 13 x 36	Vinyl Lam.	Black Knit	52	660.00 Pair
ONKYO	S-70	Tuned Port	12	5	Cone	(2)1, ½	Domes		55-20	93	10		8/5	16 x 41 x 10	Oiled Oak	Black Knit	50	600.00 Pair
(Continued)	S-55	Tuned Port	15	5	Cone	1	Dome		65-20	92	10		8/5	17 x 33 x 13	Wal. Vinyl	Black Knit	48	400.00 Pair

Our speakers aren't from parts unknown.

Cabinet
Infinite baffle system, low diffraction grill, acoustically beveled cabinet edges, dark oak finish. Designed and manufactured at Bozak factory, New Britain, CT.

Crossover
Proprietary CAD techniques pinpoint precise frequency crossover points, insuring maximum performance. Designed and manufactured at Bozak factory, New Britain, CT.

Tweeter
Patented, soft-domed, fluid damped. Effortless high end response with enhanced linearity. Designed and manufactured at Bozak factory, New Britain, CT.

MidTweeter
Patented, curvilinear aluminum cone. Handles upper midrange frequencies. Superbly reproduces strings, providing a silky, smooth sound, eliminating the harshness common to other speakers. Designed and manufactured at Bozak factory, New Britain, CT.

MidRange
Patented, curvilinear aluminum cone. Provides far superior transient response with far less distortion than conventional cones. Unbelievably stable. Designed and manufactured at Bozak factory, New Britain, CT.

Woofer
Patented, variable density, lambs-wool compound cone. Remarkable bass extension and definition, with distinctive timbres reproduced intact. Designed and manufactured at Bozak factory, New Britain, CT.

Sonic Characteristics
Satisfies all the demands of digital audio sources. Combines clarity, imaging, definition and impact to create a stunning stereo sound stage experience.

There are a lot of well known speakers on the market today. Unfortunately, practically all of them are assembled with parts sourced from a variety of unknown manufacturers. This is because of the raw material, equipment, labor cost, and extra effort involved in creating a speaker totally in-house.

But, the only way to make a truly perfect speaker is to go to this extreme, and that's exactly what we do at Bozak. Every component part of a Bozak speaker is a Bozak part, all designed, fabricated and assembled under one roof. That's why Bozak is the only popularly priced speaker company that can offer a FULL TEN YEAR WARRANTY on each of our models.

Remember, you can buy a speaker that has its name just on the front. Or, you can buy a speaker that has its name on everything inside as well. Bozak.

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LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Supertweeter = ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
ONKYO (Continued)	S-30	Tuned Port	12	5	Cone	1	Dome		65-20	91	10		8/5	14 x 33 x 11	Wal. Vinyl	Black Knit	37	300.00 Pair
	HS-15	Tuned Port	6¼	2¾	Cone	2	Cone		55-20	89	10	1.5k,10k	8/	8 x 13 x 10	Black	Black Mesh	10	240.00 Pair
ORPHEUS	8	Pas. Rad.	8			1	Dome		30-20 ±3	86	25	60,2k	8/6	45 x 16 x 9	Opt., Wood	Black Knit	67	1200.00 Pair
PAISLEY RESEARCH	Concept 20/20	Bass Ref.	(2)8	(2)4	Cones	¾	Dome		28-24 ±3	87	25	250,2.5k	8/4	43 x 10 x 16	Oak Ven.	Black Knit	80	1500.00 Pair
	Reference .5	Ported	6½			¾	Dome		45-20 ±3.5	87	20	2.5k	6/4	16 x 10 x 9	Hick. Vinyl	Black	15	215.00 Pair
	Reference One	Ported	8			¾	Dome		40-20 ±3	89	20	2.2k	6/4	19 x 10 x 9	Hick. Vinyl	Black	20	260.00 Pair
	Reference Two	Ported	8			1	Dome		35-20 ±3	88	20	2.2k	6/4	24 x 11 x 12	Hick. Vinyl	Black	31	350.00 Pair
PARADIGM	3se-mini	Bass Ref.	6½			1	Dome	No	55-20 ±2	88	20	3k	8/5	15 x 9 x 10	Opt.	Black Knit	17	125.00
	3se	Bass Ref.	8			1	Dome	No	45-20 ±2	91	15	2.5k	8/5	20 x 10 x 11	Opt.	Black Knit	22	140.00
	5se	Bass Ref.	8			1	Dome	No	40-20 ±2	91	15	2.5k	8/5	21 x 10 x 12	Opt.	Black Knit	24	175.00
	7se	Bass Ref.	8			1	Dome	No	35-20 ±2	92	15	2.3k	8/5	24 x 11 x 12	Opt.	Black Knit	28	240.00
	9se	Bass Ref.	(2)8			1	Dome	No	35-20 ±2	95	15	2k	4/4	28 x 12 x 14	Opt.	Black Knit	38	320.00
PARASOUND	VPI660	Vented	6			1	Dome		55-22 ±4	90	10	2k	4/4	19 x 9 x 10	Rswd. Vinyl	Black Metal	40 Pair	295.00 Pair
	CPI440	Vented	4			1	Dome		70-22 ±4	88	10	2.4k	4/4	9 x 6 x 7	Rswd. Vinyl	Black Metal	14 Pair	215.00 Pair
	BPI-A60	Powered Vented Subwoof.	12					W	20-180 ±3	115	60 Inc.	63-180		28 x 16 x 14	Rswd. Vinyl	Black Metal	75	449.95
	CRs220	Sealed	4			1½	Cone		80-20 ±4	92			4/4	8 x 5 x 5	Sim. Birch	Black Metal	6 Pair	99.95 Pair
	Perfect Image	Vented	8			1	Dome		25-22	92	30	2k	8/6	39 x 19 x 12	Sim. Rswd.	Black	62	750.00 Pair
	CSs810	Vented	8			2	Cone		50-20	88	25	2.2k	6/4	16 x 11 x 9	Birch	Black	12	180.00 Pair
	AWs280	Vented	5			2	Cone		55-20	88	20	2.4k	6/4	15 x 10 x 8	Black	Black	12	230.00 Pair
	CMs330	Sealed	4			1	Dome		60-22	89	30	2.6k	6/4	9 x 5 x 4	Black	Black	7	200.00 Pair
PENTAGRAM	P-10A	Pas. Rad.	10	3	Dome	2	Leaf Ribbon	No	24-20 ±2	90	35	525,5k	7.2/4.8	26 x 26 x 34	Oak	Black Cloth	92	2250.00 Pair
	P-8A	Pas. Rad.	8	3	Dome	2	Leaf Ribbon	No	33-20 ±2	90	25	675,5k	7.2/5	17 x 18 x 24	Oak	Black Cloth	42	1150.00 Pair
	P-6	Ported	6½			1	Dome	No	45-20 ±2.5	91	15	4k	8/6	18 x 15 x 8	Oak	Black Cloth	22	495.00 Pair
	Wall Pocket 1	Trans. Line	6½			1	Dome	No	38-20 ±2	91	15	4k	8/6	3 x 14 x 36	Black	Metal	23	495.00 Pair
	Wall Pocket 2	Inf. Baf.	6½			1	Dome	No	58-20 ±3	91	15	4k	8/6	3 x 14 x 7	Black	Metal	12	275.00 Pair
PHASE TECHNOLOGY	PC 600	Ac. Sus.	8			1	Dome		35-20 ±3	91	20	1.4k	4/3.5	31 x 12 x 8	Opt., Ven.	Brown Knit	42	590.00 Pair
	PC 800	Ac. Sus.	10	5¼	Solid Piston	1	Dome		30-20 ±3	91	20	200,2k	4/3.5	36 x 15 x 9	Opt., Ven.	Brown Knit	57	900.00 Pair
	325ES	Ac. Sus.	6½			½	Dome		55-20 ±3	92	15	2.5k	4/3.5	17 x 8 x 9	Opt.	Black Knit	17	225.00 Pair
	535ES	Ac. Sus.	6½	6½	Cone	1	Dome		40-20 ±3	92	15	100,1.7k	4/3	33 x 9 x 10	Opt.	Black Knit	32	395.00 Pair
	745ES	Ac. Sus.	8	6½	Cone	1	Dome		35-20 ±3	93	15	100,1.7k	4/3.5	35 x 10 x 12	Opt.	Black Knit	42	475.00 Pair
	PC 30	Ac. Sus. Subwoof.	8						35-150 ±3	89	15	150	4/3.5	11 x 12 x 13	Opt.		25	220.00
	PC 40	Ac. Sus.	5¼			1	Dome		70-20 ±3	89	15	1.5k	4/3.5	6 x 10 x 5	Opt.	Brown Knit	20 Pair	335.00 Pair
	PC 50	Ac. Sus. Subwoof.	10						30-150 ±3	87	25	150	8/6	13 x 14 x 15	Opt.		33	290.00
	PC 60	Ac. Sus.	6			1	Dome		55-20 ±3	87	15	1.2k	4/4	8 x 14 x 8	Opt.	Brown Knit	30 Pair	420.00 Pair
	PC 1000	Pas. Rad.	8	5¼	Solid Piston	1	Dome		30-20 ±3	91	25	250,2k	8/6	15 x 38 x 9	Opt.	Brown Knit	65	1200.00 Pair
	PC 60/50	Ac. Sus.	10	6	Solid Piston	1	Dome		30-20 ±3	87	25	150,1.2k	8/6	Three Pieces	Opt.	Brown Knit	66 Sys.	710.00 Sys.
	PC 40/30	Ac. Sus.	8	5¼	Solid Piston	1	Dome		35-20 ±3	89	15	150,1.5k	4/3.5	Three Pieces	Opt.	Brown Knit	45 Sys.	550.00 Sys.
PHOBOS	Phobos	Inf. Baf.	6		Cone	1	Dome	M,T	60-20 ±4	84	15	5k	8/6	12 Dia.	Teak	Brown	30 Pair	230.00 Pair
PINNACLE	PN-5	Bass Ref.	5¼			¾	Dome		75-21	88	10	5k	6/	11 x 7 x 6	Hick. Vinyl	Black Knit	14 Pair	149.00 Pair
	PN-6	Ac. Sus.	6½			¾	Dome		40-21	88	10	4k	4/	15 x 9 x 7	Hick. Vinyl	Black Knit	24 Pair	199.00 Pair
	PN-7	Bass Ref.	6½			1,¾	Dome		40-21	90	10	3.5k,10k	4/	15 x 9 x 9	Hick. Vinyl	Black Knit	26 Pair	269.00 Pair
(Continued)	PN-8	Bass Ref.	8			1,¾	Dome		38-23	87	15	2.2k,14k	6/	19 x 12 x 9	Hick. Vinyl	Black Knit	52 Pair	389.00 Pair

We're sorry that there are only forty-five places in the U.S. to buy our speakers, but if we tried to build them faster to get more dealers, they wouldn't be Bozak.

When you design, fabricate and assemble every single component part in a speaker, it's definitely time consuming. But at Bozak, it's the only way we know how to do it.

From our patented curvilinear aluminum cones to our hand crafted cabinets, Bozak speakers reflect the highest tradition of American ingenuity and quality. Our speakers sound so good because each and every part was specifically created by us, not sourced from some unknown vendor.

So, while we regret any inconvenience you might have locating a pair of Bozaks, we're certain you'll find the time was well spent.

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LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to KHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms, Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
PINNACLE (Continued)	PN-10	Bass Ref.	10	1½	Dome	¾	Dome		36-23	90	15	1.2k,8.5k	6/	26 x 16 x 10	Hick. Vinyl	Black Knit	42	599.00 Pair
	PN-15	Bass Ref.	10	1½	Dome	1,¾	Dome		36-21	92	15		6/	28 x 16 x 10	Mahog Ven.	Black Knit	46	1000.00 Pair
	Monitor 200	Ac. Sus.	12	4½	Cone	¾			38-21	92	10		6/	23 x 13 x 12	Hick. Vinyl	Black Knit	35	550.00 Pair
PIONEER	CS-707	Bass Ref.	15¾	4¾	Cone		Horn	No	30-25	98		1.5k,4k, 11k	8/	18 x 29 x 11	Vinyl	Black Cloth	44.1	659.90 Pair
	CS-607	Bass Ref.	12	4¾	Cone		Horn	No	33-25	96		2k,5k, 11k	8/	16 x 25 x 11	Vinyl	Black Cloth	35.4	559.90 Pair
	CS-407	Bass Ref.	12	4	Cone	2½	Cone	No	35-20	94		3k,10k	8/	15 x 25 x 10	Vinyl	Black Cloth	23.2	329.90 Pair
	CS-G301 WAll	Bass Ref.	12	4¾	Cone	2½	Cone	No	35-20	91		3.5k,7k	6/	15 x 27 x 13	Vinyl	Black Cloth	29.1	259.90 Pair
	CS-G201 WAll	Bass Ref.	10	3	Cone	2½	Cone	No	40-20	90		3k,6k	6/	14 x 24 x 12	Vinyl	Black Cloth	20.2	198.90 Pair
	CS-G101 WAll	Bass Ref.	10			2½	Cone	No	55-20	90		5.5k	6/	13 x 22 x 8	Vinyl	Black Cloth	14.5	139.90 Pair
	DSS-9	Bass Ref.	12	4¾	Cone		Ribbon		30-50	91		650,4k	6/	15 x 27 x 14	Vinyl	Black Cloth	57.5	959.90 Pair
	DSS-7	Bass Ref.	12	2½	Cone		Ribbon		30-50	91		850,4.5k	8/	15 x 26 x 14	Vinyl	Black Cloth	49.1	659.90 Pair
	DSS-5	Bass Ref.	10	2½	Cone	¾	Dome		38-30	91		1.2k,5k	8/	13 x 22 x 11	Vinyl	Black Cloth	31.2	459.90 Pair
	DSS-E10	Bass Ref.	12	4¾	Cone		Ribbon		30-50	91		650,4k	6/	15 x 27 x 14	Wood	Black Cloth	57.5	1000.00 Pair
	DSS-E6	Bass Ref.	8	2½	Cone		Ribbon		40-50	90		1k,5k	6/	11 x 19 x 10	Vinyl	Black Cloth	23.2	400.00 Pair
PLASMA-TRONICS	Hill Type I	Plasma Inf. Baf.	14	6½	Cone		Plasma	T	18-100 ±3	107	100	130,700	8/3	58 x 25 x 20	Opt.	Black Cloth	580 Pair	10,000. Pair
PLC AUDIO	7	Ac. Sus.	5			2	Cone		76-22 ±3	87	20	1k,10k	8/4	8 x 5 x 10	Opt.	Black Mesh	6¾	345.00 Pair
	5	Ac. Sus.	5			2	Cone		81-22 ±3	87	15	1.5k,10k	8/4	8 x 5 x 7	Wal. Vinyl	Black Mesh	5	285.00 Pair
POLK AUDIO	SDA-SRS	Pas. Rad.	15	(8)6½	Cones	(4)1	Domes		10-26	93	10	45,2k	4/	64 x 21 x 13	Opt., Wood	Black Cloth	185	1395.00
	SDS-SRS2	Pas. Rad.	15	(4)6½	Cones	(2)1	Domes		12-26	91	10	45,2k	4/	50 x 21 x 13	Opt., Wood	Black Cloth	150	995.00
	SDA-1A	Pas. Rad.	12	(4)6½	Cones	(2)1	Domes		15-26	92	10	50,2.5k	4/	44 x 16 x 12	Opt.	Black Cloth	85	695.00
	SDA-2A	Pas. Rad.	12	(2)6½	Cones	1	Dome		15-26	91	10	50,2.5k	4/	40 x 16 x 12	Opt.	Black Cloth	70	499.00
	SDA-CRS+	Pas. Rad.	10	(2)6½	Cones	1	Dome		22-26	91	10	50,2.5k	4/	13 x 20 x 10	Opt.	Black Cloth	38	395.00
	RTA 12C	Pas. Rad.	12	(2)6½	Cones	1	Dome		17-26	92	10	50,2k	4/	39 x 16 x 12	Opt.	Black Cloth	75	479.00
	Monitor 11A	Pas. Rad.	10	(2)6½	Cones	1	Dome		18-26 ±3.5	92	10	60,3k	6/	34 x 16 x 12	Wal. Vinyl	Black Cloth	60	399.95
	Monitor 10B	Pas. Rad.	10	(2)6½	Cones	1	Dome		20-26	92	10	60,3k	4/	28 x 16 x 12	Opt.	Black Cloth	50	329.95
	Monitor 7C	Pas. Rad.	10	6½	Cone	1	Dome		24-26	91	10	60,3k	4/	24 x 14 x 9	Opt.	Black Cloth	36	249.95
	Monitor 5B	Pas. Rad.	8	6½	Cone	1	Dome		28-26	91	10	60,3k	4/	22 x 11 x 9	Opt.	Black Cloth	29	189.95
	Monitor 5 Jr.	Ported		6½	Cone	1	Dome		30-26	92	10	3k	4/	17 x 9 x 9	Opt.	Black Cloth	22½	129.95
	Monitor 4.5	Ported		6½	Cone	1	Dome		30-25 ±4	92	10		4/	17 x 9 x 9	Wal. Vinyl	Black Cloth	20	99.95
	Monitor 4A	Ported		6½	Cone	1	Dome		31-25	92	10	4.5k	4/	15 x 9 x 7	Opt.	Black Cloth	16	84.95
	VS-25	Pas. Rad.	6½	6½	Cone	1	Dome		26-25	93	3	100,3k	6/	21 x 9 x 11	Black	Black Cloth	27	169.95
	VS-19	Ported		6½	Cone	1	Dome		28-25	93	3	3k	6/	17 x 9 x 11	Black	Black Cloth	24	149.95
	VS-12	Ported		6½	Cone	1	Dome		30-25	93	3	3k	6/	15 x 9 x 11	Black	Black Cloth	20	99.95
PRES SPEAKERS	Mini Superior	Bass Ref.	6½			¾	Dome		45-22 ±3	90	20		8/	16 x 10 x 7	Opt.	Black Knit	18	575.00 Pair
	Oval	Bass Ref.	6½,10			1¼, 4½x2	Dome, Horn		30-18.5 ±3	93	20		8/	26 x 15 x 14	Opt.	Black Knit	30	1200.00 Pair
	Classic I	Ac. Sus.	10			¾	Dome		35-22 ±3	90	20		8/	24 x 13 x 16	Opt.	Black Knit	35	1700.00 Pair
	Classic II	Ac. Sus.	8			¾	Dome		40-22 ±3	89	20		8/	20 x 10 x 12	Opt.	Black Knit	28	825.00 Pair
PRINCETON ACOUSTICS	Aria One-EB	Sat. & Subwoof.	(4)8		Cone	(4)2	ACT		22-22	90	50		4/	Four Pieces	Opt.	Opt., Knit	234 Sys.	4200.00 Sys. w/ Stands
	Aria One	Sat. & Subwoof.	(2)8		Cone	(4)2	ACT		28-22	90	25		4/	Four Pieces	Opt.	Opt., Knit	182 Sys.	3650.00 Sys. w/ Stands
	Aria Two-EB	Sat. & Subwoof.	(2)8		Cone	(2)2	ACT		32-21	89	25		4/	Four Pieces	Opt.	Opt., Knit	144 Sys.	2500.00 Sys. w/ Stands
	PA-10	Bass Ref.	(2)6		Cone	(2)2	ACT		39-20.5	88	25		4/	10 x 12 x 30	Opt., Wood	Opt., Knit	50	1450.00 Pair
	PA-5	Inf. Baf.	8		Cone	2	ACT		43-20	84	25		8/	11 x 11 x 22	Opt., Wood	Opt., Knit	28	795.00 Pair

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Superweeter = ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
PROAC	Super Tablette	Ported	4			¾	Dome		70-20	85	25	5k	8/	10 x 6 x 9	Opt., Wood	Black	15	595.00 Pair
	Super EBT	Ported	(2)4			¾	Dome		60-20	87	25	5k	8/	15 x 6 x 9	Opt., Wood	Black	20	850.00 Pair
	Studio 1	Ported	7			1	Dome		50-20	89	50	3k	8/	16 x 9 x 10	Opt., Wood	Black	25	1050.00 Pair
	EBS	Ported	10	3	Dome	¾	Dome		25-20	89	100	450,5k	8/	33 x 12 x 13	Opt., Wood	Black	90	3700.00 Pair
PRODIGEE ACOUSTICS	PA261	Sealed	(2)6			1	Dome	No	45-20 ±3	92	30	250,4k	6/3.9	9 x 11 x 36	Opt., Wood	Black Knit	51	850.00 Pair
	PA841	Sealed	8	4	Cone	1	Dome	No	39-20 ±3	91	40	500,5k	7/4	10 x 11 x 36	Opt., Wood	Black Knit	54	850.00 Pair
	PA1051	Sealed Sat. & Subwoof.	10	5	Cone	1	Dome	No	31-20 +3,-2	93	40	90,4.5k	6/4	13 x 11 x 36	Opt., Wood	Black Knit	70	1200.00 Pair
QUAD	ESL-63	ES Dipole							35-20	86	30		8/	36 x 26 x 11	Opt.	Brown	41	2950.00 Pair
QUASAR	SW99	Ac. Sus.	5½			2½		W,T	30-20						Black Plas.	Black	18 Pair	199.95 Pair
	SW30	Ac. Sus.	4						110-20						Black Alum.	Black	4½ Pair	49.95 Pair
RAUNA	Tyr	Ported, Concrete Encl.	6½			1	Dome		40-20 ±3	89	20		8/8	10 x 10 x 13	Rswd.	Black Foam	30	575.00 Pair
	Leira	Trans. Line, Concrete Encl.	6½			1	Dome		35-20 ±3	88	30			9 x 15 x 30	White	Black Mesh	60	875.00 Pair
	Anjala	Trans. Line, Concrete Encl.	6½			1	Dome		35-20 ±3	89	30			10 x 10 x 36	Rswd.	Black Foam	70	1085.00 Pair
	Njord	Trans. Line, Concrete Encl.	(2)6½			1	Dome		30-20 ±3	91	30			9 x 15 x 36	White	Black Mesh	80	1400.00 Pair
RCA	SPK 125	Ac. Sus.	8			1	Dome	T	45-20	89	10	2.3k	6/	16 x 9 x 10	Black Vinyl	Black Knit	14½	199.00 Pair
	SPK 380	Ac. Sus.	11	4	Cone	1	Dome	M,T	35-20	90	30	500,3k	6/	25 x 14 x 13	Opt., Vinyl	Black Knit	36	449.00 Pair
	Dimensia SPK 385	Ac. Sus.	11	4	Cone	1	Dome	M,T	35-20	90	30	500,3k	6/	25 x 14 x 13	Opt., Vinyl	Black Knit	36	449.00 Pair
REALISTIC	Optimus 1000 (40-1130)	Tuned Port	15	5	Cone	3	Dome	No	50-20	92			8/	31 x 17 x 12	Oiled Wal.		44	400.00 Pair
	Optimus 900 (40-1121)	Tuned Port	12	4	Cone	2½	Dome	No	50-20	90			8/	30 x 14 x 11	Oiled Wal.		33	300.00 Pair
	MC-1800 (40-1992)	Bass Ref.	8			2½	Dome	No	70-20	89			8/	18 x 11 x 7	Oiled Wal.		13	120.00 Pair
	Optimus T-120 (40-2047)	Tuned Port	10	5	Cone	1	Dome	M,T	50-20	91			8/6.5	36 x 13 x 12	Oiled Wal.	Brown		199.95
	Optimus 400 (40-2048)	Tuned Port	12	5	Cone		Leaf	M,T	40-40	90			8/6.5	27 x 14 x 11	Oiled Wal.	Brown		199.95
	Mach II (40-4032)	Tuned Port	15	5	Cone	4	Horn	M,T	25-40	94			8/6.5	28 x 18 x 12	Oiled Wal.	Brown		229.95
	Optimus 800 (40-1120)	Tuned Port	12	4	Cone	2½	Cone	M,T	50-20	90			8/6.5	30 x 14 x 10	Oiled Wal.	Black		159.95
	Optimus T-45 (40-4033)	Tuned Port	10	4	Cone	2½	Cone	M,T	50-20	91			8/6.5	23 x 13 x 11	Oiled Wal.	Brown		139.95
	Optimus 600	Tuned Port	8	4	Cone	2½	Cone		50-20	90			8/6.5	27 x 12 x 10	Oiled Wal.	Black		99.95
	Nova-15 (40-4034)	Tuned Port	8			2½	Cone	No	60-20	89			8/6.5	19 x 11 x 8	Oiled Wal.	Brown		79.95
	MC-1201 (40-1990)	Ac. Sus.	8			2½	Cone	No	85-17				8/6.5	18 x 11 x 8	Oiled Wal.	Brown		59.95
RECOTON	SP1	Powered Bass Ref.	5						80-20 ±5	85	12 Inc.			9 x 6 x 6			14 Pair	
	SP2	Powered Air Sus.	5¼			2¼	Cone	W,T	60-20 ±5	85	12 Inc.	800		18 x 7 x 7			25 Pair	
REEL TO REAL DESIGNS	Legacy-1	Slot Loaded	8,10	6½,1½	Cone, Dome	4	Leaf		28-30 ±2	91	30	180,1.8k, 8k	4/4	12 x 13 x 42	Opt., Wood	Opt., Knit	85	1296.00 Pair
	Legacy-2	Bass Ref.	10	6½	Cone	1	Dome	T	33-20 ±3	91	15	180,2.2k	8/4	12 x 11 x 38	Opt., Wood	Opt., Knit	70	886.00 Pair
	Legacy-3	Bass Ref.	8		Cone	1	Dome		42-20 ±3	90	15	2.5k	4/3	12 x 13 x 18	Opt., Wood	Opt., Knit	28	450.00 Pair
	Matrix-1	Time Aligned	6½		Cone	1	Dome	T	55-20 ±2	90	15	2.2k	8/6	12 x 10 x 16	Opt., Wood	Opt., Knit	26	425.00 Pair
	Satellite Matrix-1 Subwoofer	Bass Ref. Subwoof.	(2)10					W	26-80 ±3	91	15	Var.	8/4	18 x 15 x 24	Opt., Wood	Opt., Knit	80	450.00
RENAISSANCE ACOUSTICS (Continued)	Companion I	Ac. Sus.	7			1	Dome		60-20 ±3	87	15	3k	8/6	16 x 10 x 8	Opt., Ven.	Opt., Knit	36 Pair	395.00 Pair
	Companion II	Ac. Sus.	8			1	Dome		55-20 ±3	87	20	3k	8/6	19 x 12 x 11	Opt., Ven.	Opt., Knit	55 Pair	485.00 Pair

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
RENAISSANCE ACOUSTICS (Continued)	Companion Bass Module	Ac. Sus. Subwoof.	8						40-100 ±3	85	40	100	8/8	25 x 15 x 12	Opt., Ven.	Opt., Knit	75 Pair	425.00 Pair; 485.00 Pair w/Xover
RESPONS	Grand		(2)12	3½	Cone	¾	Dome		25-25	85	50	275,2.7k	7/5	25 x 50 x 18	Oak	Black Foam	200	4400.00 Pair
	Baby Grand		8	3½	Cone	¾	Dome		35-25	85	50	275,2.7k	7/5	16 x 36 x 16	Opt.	Black Foam	115	2400.00 Pair
	Spinet		6			¾	Dome		45-25	86	50	2.5k	8/5	11 x 14 x 13	Opt.	Black Foam	50	1200.00 Pair
REVOLVER	Revelation #1	Inf. Baf.	5			½	Dome			89	15	3k	8/6	8 x 15 x 12	Black Ash	Black Knit		325.00 Pair
	Revelation #2	Inf. Baf.	5			¾	Dome			89	15	3k	8/6	8 x 18 x 12	Black Ash	Black Knit		475.00 Pair
	Revelation #3	Inf. Baf.	8			¾	Dome			89	15	3k	8/6	9 x 20 x 12	Black Ash	Black Knit		625.00 Pair
REVOX	Forum MKII	Bass Ref.	9½	4	Cone	¾	Dome		30-32 ±3	88	20	400,3.5k	4/4	13 x 18 x 13	Wal. Ven.	Black Knit	39¾	600.00
	Plenum MKII	Bass Ref.	10	4½	Cone	1	Dome		25-26 ±3	89	20	380,4.1k	4/4	14 x 23 x 13	Wal. Ven.	Black Knit	59½	750.00
	Atrium MKII	Bass Ref.	10	4¾	Cone	1	Dome		22-26 ±3	91	20	400,4k	4/4	14 x 34 x 15	Wal. Ven.	Black Knit	84	1080.00
	Symbol MKII	Pas. Rad.	12	4¾	Cone	1	Dome		20-26 ±3	92	20	340,3k	4/4	17 x 40 x 17	Wal. Ven.	Black Knit	113	1450.00
	Agora B	Internal Triamp	(2)12	5	Cone	¾	Dome	W,T	30-21 ±3		Inc.	200,3.7k		17 x 29 x 17	Opt.	Opt., Knit	37 Pair	3600.00 Pair
	Studio 4	Ac. Sus.	9	1	Dome	¾	Dome		50-20 ±3	86	20	760,3.2k	4/4	19 x 12 x 12	Black Varn.	Black Metal	40 Pair	600.00 Pair
	Piccolo/Bass	Sat. & Subwoof.	10¼	4¼	Cone	1	Dome		48-22 ±3	86	20	120,1.8k	4/4	Three Pieces	Black Varn.	Black Metal	43 Sys.	650.00 Sys.
RH LABS	SB-3b	Subwoof.	12					W	22-150	89	80		5.8/4.2	23 x 18 x 18	Opt., Wood	None	85	475.00
	SB-3A	Powered Subwoof.	12					W	22-150	94	150 Inc.	40-150		23 x 18 x 18	Opt., Wood	None	105	850.00
	SB-4A	Powered Subwoof.	10					W	29-150	94	100 Inc.	40-150		19 x 15 x 16	Opt., Wood	None	65	595.00
ROBERTSON AUDIO	Eleven	Inf. Baf.	8			1½	Cone		40-22	90	20	1.5k	8/	21 x 12 x 11	Mahog	Black Knit	36	795.00 Pair
	Twenty One	Inf. Baf.	(2)8			1½	Cone		30-22	92.5	20	3.5k	4/	32 x 19 x 9	Mahog	Black Knit	54	1695.00 Pair
ROGERS	LS5/9	Bass Ref.	8			1⅜	Dome		50-16 ±3	87	25		8/	11 x 11 x 18	Opt., Wood	Black Knit	28	2595.00 Pair
	LS2	Bass Ref.	5			¾	Dome	No	60-20 ±2	88	25	4k	8/	8 x 9 x 14	Opt., Wood	Black Knit	13	399.00 Pair
	LS6	Bass Ref.	8			¾	Dome	No	55-20 ±2	89	25	4k	8/	11 x 11 x 20	Opt., Wood	Black Knit	21	599.00 Pair
	LS7	Bass Ref.	8			1	Dome	No	50-18 ±2	89	25	3k	8/	11 x 11 x 22	Opt., Wood	Black Knit	30	799.00 Pair
	LS3/5A	Inf. Baf.	5			¾	Dome	No	70-20 ±3	82	25	3k	15/	8 x 6 x 12	Opt., Wood	Black Knit	12	599.00 Pair
	Studio 1	Bass Ref.	8	1	Dome	¾	Dome	No	40-28 ±3	88	25	3k,14k	8/	12 x 12 x 25	Opt., Wood	Black Knit	31	1199.00 Pair
	Studio 2	Bass Ref.	12	1½	Dome	¾	Dome	No	38-20 ±3	92	50	2k,8k	8/	15 x 17 x 32	Opt., Wood	Black Knit	50	2299.00 Pair
	LSB1	Inf. Baf. Subwoof.	(2)7					No	30-60 ±3		30	100	8/	27 x 21 x 18	Opt., Wood	Black Knit	58	599.00
ROGERSOUND LABS	2600 Mini Monitor	Ac. Sus.	8	4½	Cone	1	Dome	No	60-20	92	20	1k,6k	4/	14 x 11 x 9	Black Vinyl	Black Mesh	13¼	119.00
	Speed-Screen	Pas. Rad.	8	1⅜	Dome	1	Dome	M,T	42-20	90	35	600,9.5k	8/	48 x 18 x 5	Oak	Black	66	350.00
	Titan	Pas. Rad.	12,8	5	Cone	2	Horn	M,T	40-18	94	10	250,1.2k, 4.7k	8/	39 x 30 x 11	Opt.	Opt.	137	750.00
	Forty	Bass Ref.	12	5	Cone	1	Dome	M,T	40-22	88	10	1k,4k	8/	14 x 11 x 25	Wal. Vinyl	Brown	40	149.00
	Eighty	Pas. Rad.	12	5	Cone	1	Dome	M,T	32-22	88	10	1k,4k	8/	38 x 15 x 11	Wal. Vinyl	Brown	58	199.00
	Minicron	Ac. Sus.	4			1	Dome		70-20	81	10	2.5k	8/	7 x 5 x 4	Black	Black	5½	125.00 Pair
	Elan	Pas. Rad.	12	5	Cone	1	Dome	M,T	20-22	88	15	1k,5k	8/	15 x 13 x 41	Opt., Wood	Opt.	67	400.00
	Nevada XT	Pas. Rad.	12,8	5	Cone		Horn	M,T	28-20	90	10	1k,4k	4/	17 x 14 x 27	Opt.	Opt.	63	389.00
	3600 Studio Monitor	Tuned Port	12	5	Cone	1	Dome	M,T	35-22	87	15	800,4k	8/	14 x 11 x 25	Opt.	Opt.	50	250.00
	Magnificent	Ac. Sus.	8			1	Dome	T	45-22	85	20	2.5k	8/	10 x 9 x 17	Oak	Brown	21	125.00
	Outsider	Ac. Sus.	6½			1½	Cone		50-20	83	15	2.4k	8/	8 x 7 x 13	Opt.	Opt.	17	99.00
ROHRER ACOUSTIC	Digital Monitor DM602	Bass Ref.	6				Ribbon	T	32-85 ±3	87	30	4.5k	8/6	19 x 12 x 41	Oak	Black Cloth		1200.00 Pair
	Digital Tower DT1201	Bass Ref. Subwoof.	12						16-100 ±3	89	30		8/6	20 x 20 x 82	Black Cloth			600.00
ROSSMAN AUDIO	SA.5	Powered Bass Ref.	5			1	Dome	No	42-20 ±3	90	15 Inc.	2.3k	100k	13 x 9 x 12	Black Slate	Black Knit	48 Pair	400.00 Pair
	SA.8	Powered Bass Ref.	6½			1	Dome	No	38-20 ±3	90	15 Inc.	2.3k	100k	17 x 10 x 12	Black Slate	Black Knit	60 Pair	500.00 Pair

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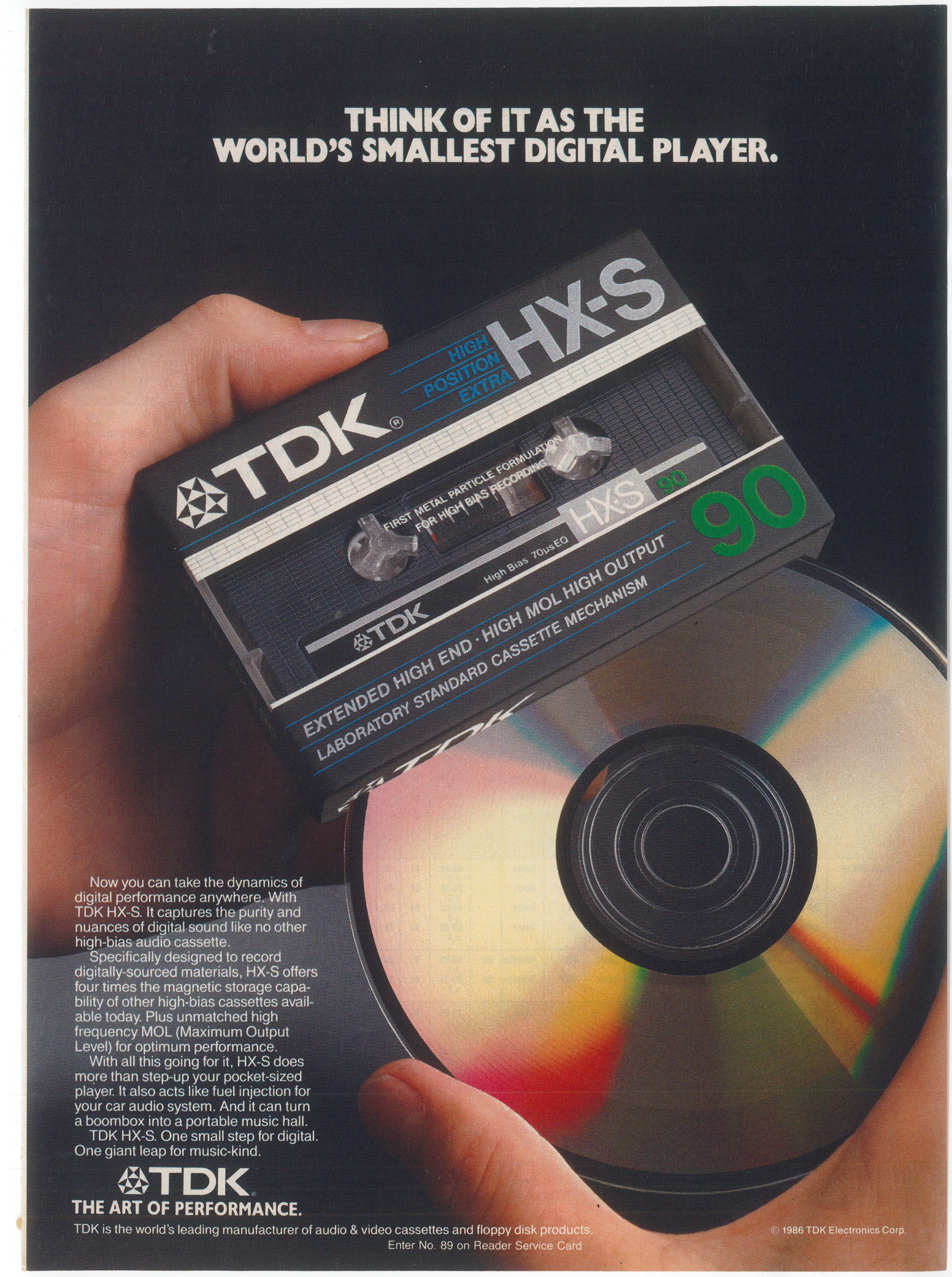

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LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Superweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
ROYD LOUDSPEAKER	Coniston R	Bass Ref.	5			¾	Dome		50-22 ±3	89	10	4k	8/	12 x 8 x 7	Opt.	Black Foam	17 Pair	290.00 Pair
	A25	Inf. Baf.	7			¾	Dome		40-22 ±4	87	15	2.5k	8/	20 x 11 x 9	Black	Black Foam	33 Pair	390.00 Pair
RTR	G350B	Pas. Rad., Vented	12,10	1½	Dome	1	Dome	M,T	22-25	91	10	1.5k,9k	8/5	18 x 11 x 38	Wal. Ven.	Black Knit	75	450.00
	G200B	Pas. Rad., Vented	12, (2)10			1	Dome	M,T	25-25	91	10	2.5k	8/5	15 x 13 x 36	Wal. Ven.	Black Knit	62	330.00
	G80B	Pas. Rad., Vented	10,8			1	Dome	M,T	32-25	90	10	2.5k	8/5	15 x 11 x 26	Wal. Vinyl	Black Knit	40	220.00
	G40B	Pas. Rad., Vented	(2)8			1	Dome	M,T	35-25	90	10	2.5k	8/5	12 x 10 x 23	Wal. Vinyl	Black Knit	31	180.00
SANSUI	XL-500C	Pas. Rad.	12	4¾	Cone	2	Dome	M,T	27-40	93			8/	15 x 13 x 41	Sim. Wood		55	1320.00 Pair
	XL-300	Inf. Baf.	12	4¾	Cone	2	Dome	M,T	30-40	93			8/	15 x 9 x 31	Sim. Wood		46¼	1000.00 Pair
	XL-100	Inf. Baf.	10½	4¾	Cone	2	Dome	T	35-25	92			8/	15 x 13 x 27	Sim. Wood		28¾	840.00 Pair
	S-V929U	Pas. Rad.	12	4	Cone	2½	Cone		29-22	92			8/	15 x 11 x 41	Sim. Wood		48	600.00 Pair
	S-91U	Pas. Rad.	12	4	Cone	3	Cone		29-22	92			8/	15 x 11 x 41	Sim. Wood		44	480.00 Pair
	S-71U	Inf. Baf.	15	4	Cone	3	Cone		30-22	92			8/	18 x 13 x 32	Sim. Wood		41⅞	420.00 Pair
	S-81U	Pas. Rad.	10	4	Cone	2½	Cone		32-22	91			8/	13 x 11 x 38	Sim. Wood		34⅛	380.00 Pair
	S-V828U	Pas. Rad.	10	4	Cone	2½	Cone		32-22	91			8/	13 x 11 x 38	Sim. Wood		41	460.00 Pair
	S-U9000	Inf. Baf.	9			2	Cone		40-20	90			8/	11 x 9 x 20	Sim. Wood		13¾	326.00 Pair
	S-V727U	Pas. Rad.	8	4	Cone	2	Cone		30-22	90			8/	13 x 10 x 34	Sim. Wood		28½	320.00 Pair
	S-61U	Inf. Baf.	12	4	Cone	3	Cone		32-22	91			8/	15 x 11 x 30	Sim. Wood		29½	310.00 Pair
	S-51U	Inf. Baf.	10	4	Cone	2½	Cone		34-22	90			8/	14 x 11 x 26	Sim. Wood		24	260.00 Pair
	S-41U	Inf. Baf.	10	5	Cone	3	Cone		35-20	90			8/	14 x 11 x 26	Sim. Wood		23	220.00 Pair
	S-U7000		6½			3	Cone		45-20	91			8/	10 x 8 x 15	Sim. Wood		9⅜	218.00 Pair
SARAS	ST 200A	Inf. Baf.	(2)10	5	Cone	1	Dome	No	30-18 ±2	90		500,5k	8/	43 x 15 x 12	Satin Wal.	Brown	80	1600.00 Pair
	ST 101	Inf. Baf.	(2)8	5	Cone	1	Dome	No	35-18 ±2	88		375,3.5k	8/	36 x 13 x 12	Satin Wal.	Brown	74	1300.00 Pair
	45	Ac. Sus.	12	5	Cone	1	Dome	No	40-18 ±3	90		500,5k	8/	25 x 16 x 12	Satin Wal.	Brown	65	1000.00 Pair
	33	Ac. Sus.	10	5	Cone	1	Dome	No	40-18 ±3	88		500,5k	8/	24 x 14 x 12	Satin Wal.	Brown	52	800.00 Pair
	22	Ac. Sus.	12			1	Dome	No	40-18 ±3	90		2k	8/	25 x 16 x 12	Satin Wal.	Brown	55	650.00 Pair
	12	Ac. Sus.	10			1	Dome	No	40-18 ±4	87		1.8k	4/	24 x 14 x 12	Satin Wal.	Brown	46	550.00 Pair
	8	Bass Ref.	8			1	Dome	No	50-18 ±4	87		2k	8/	19 x 12 x 10	Wal.	Brown	32	450.00 Pair
	SSB	Powered Subwoof.	12					W	20-160		Inc.	Sel.		18 x 18 x 21	Satin Wal.	Brown	90	850.00
SCAN-SPEAK	SD-18	Inf. Baf.	6			¾	Dome		42-22 ±3	91	40		8/6	23 x 10 x 11	Rswd.	Black Knit	29	525.00 Pair
	SD-21	Inf. Baf.	8	4	Cone	¾	Dome		38-22 ±3	92	40		8/6	29 x 12 x 13	Rswd.	Black Knit	42	675.00 Pair
	SD-25	Inf. Baf.	10	4	Cone	¾	Dome		33-22 ±3	94	50		8/6	32 x 13 x 14	Rswd.	Black Knit	50	780.00 Pair
	Extreme	Inf. Baf.	13	4	Cone	¾	Dome		22-22 ±3	94	75		8/6	46 x 16 x 16	Rswd.	Black Knit	92	2150.00 Pair
S.C.D.	G.C. Rock Monitor	Sealed	(2)8	3	Dome	(2)2	Ribbons	No	50-20 ±3	91	25	1k,4k	10/6	11 x 10 x 36	Wood Vinyl	Black Knit	105 Pair	799.00 Pair
	J.C. Classical Monitor	Sealed	12	3	Dome	(2)2	Ribbons	No	38-24 ±3	91	100	800,4k	8/4	Four Pieces	Black	None	235 Sys.	1695.00 Sys.
SCOTT	S106	Ac. Sus.	6½			1¾	Cone		60-20 ±4	89	5	3.5k	8/6	14 x 9 x 8	Wal. Vinyl	Black Knit	8½	200.00 Pair
	S108	Ac. Sus.	8			1¾	Cone		55-20 ±4	91.5	5	3.5k	8/6	22 x 12 x 9	Wal. Vinyl	Black Knit	16	240.00 Pair
	S120	Ac. Sus.	12	4¼	Cone	1¾	Cone		45-20 ±4	92	10	1.1k,3.5k	8/6	32 x 16 x 12	Wal. Vinyl	Black Knit	35	540.00 Pair
	S150	Ac. Sus.	15	5	Cone	1	Dome		45-20 ±4	90.5	10	1.1k,3.5k	8/6	33 x 19 x 12	Wal. Vinyl	Black Knit	45	600.00 Pair
	Bostonian One	Ac. Sus.	6½			1	Dome		55-22 ±4	89.5	10	2.2k	4/4	15 x 9 x 8	Oak Vinyl	Black Knit	14	300.00 Pair
	Bostonian Four	Ac. Sus.	15	(2)4½	Cones	(3)1	Domes		36-22 ±4	90	20	700,3.5k	4/4	36 x 19 x 13	Oiled Wal.	Black Knit	72	1600.00 Pair
SFI	100	Bipolar	8	6½	Dyna-pleat				50-20	88	25							1095.00 Pair
	25	Bipolar	8		Dyna-pleat		Dome		50-20 ±4	88	25		4/3	36 x 17 x 17				1295.00 Pair
	35	Bipolar	10		Dyna-pleat		Dome		50-20 ±4	87.5	25		6/4	46 x 17 x 17				1495.00 Pair

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The tweeters and midranges in these speakers are made of polycarbonate which combines low mass with a high amount of internal damping. This results in wide, flat frequency response and superb off-axis dispersion for excellent sound reproduction of the mid to high frequency signals. This advanced design plus the addition of ferrofluid-filled dome tweeters also results in greater power handling. For example, the Phase Linear 6″ x 9″ handles 110 watts continuous, 250 watts peak power!

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LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Supertweeter = ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
SHADOW AUDIO	Compact Monitor	Aperiodic	6½			1	Dome	No	50-20 ±3	89	20	2.7k	8/5	10 x 12 x 34	Oiled Oak	Black Knit	35	499.00 Pair
SHAHINIAN ACOUSTICS	Obelisk	Trans. Line, Pas. Rad.	8	(2)1⅜	Domes	(4)⅜	Domes		28-22 +0,-3	90	50	1.8k,9k	5/4	15 x 13 x 29	Opt., Wood	Opt., Knit	55	1600.00 Pair
	Arc	Pas. Rad.	8	1⅜	Dome	1	Dome		28-18 +0,-3	88	30	1.8k,9k	6/4	14 x 10 x 28	Oiled Oak	Brown Knit	45	950.00 Pair
	Elf	Vented	5¼			1	Dome		55-21 +0,-3	90	25	4.5k	6/4	7 x 8 x 13	Oiled Oak	Brown Knit	25 Pair	350.00 Pair
	Double Eagle	Subwoof.	(2)8						28-1 +0,-3	88			7/3.5	23 x 14 x 30	Oiled Wal.	Brown	100	825.00
	Contra-Bombarde	Slot Loaded Subwoof.	(2)8						16-200 +0,-3	89	50	Ext.	8/4	28 x 19 x 35	Oiled Wal.		188	1800.00
SHANNON-BROOKE AUDIO	I	Ac. Sus.	12	6½	Cone	¾	Dome		27-35 ±3	89	40	200,3.2k	4/3	20 x 19 x 39	Wal.	Black Knit	80	1750.00 Pair
SIDEREAL AKUSTIC	CEL	Vented	(2)8			1	Dome			96	50	3k	8/5	21 x 15 x 20		Black Knit	40	925.00
SIEFERT RESEARCH	Maxim III	Ducted Port	6½			1	Dome		46-22 ±3	86	30	3k	8/6	13 x 11 x 9	Opt.	Black Knit	18	499.00 Pair
	Maxim IIID	Ducted Port	6½			⅞	Dome		46-38 ±3	86	30	2.5k	8/6	13 x 11 x 9	Opt.	Black Knit	18	599.00 Pair
	Magnum III	Ducted Port	8	4	Cone	1	Dome		38-24 ±3	88	30	250,3k	6/4	22 x 14 x 13	Opt.	Black Knit	42	899.00 Pair
	Subwoofer	Ducted Port Subwoof.	10					W	2-100 ±3	88	30	100	8/6	20 x 20 x 20	Opt.	Black Knit	80	699.00 w/EQ & Xover
SIGNET	SL-100	Tuned Port	10	3	Dome	(2)1	Domes		40-20 ±3	90	25	500,5k	8/4	13 x 36 x 16	Wal. Ven.	Black Cloth	66	1450.00 Pair

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
SNELL ACOUSTICS	Type C-i	Inf. Baf.	10	4½	Cone	(2)¾	Domes		24-20 ±3	86	80	350,2.7k, 15k	8/4	44 x 15 x 13	Opt.	Opt., Cloth	80	1890.00 Pair
	Type K	Inf. Baf.	8			¾	Dome		70-20 ±2.5	90	10	2.3k	8/8	18 x 11 x 9	Opt.	Opt., Cloth	27	450.00 Pair
	Type J-II	Bass Ref.	8			1	Dome		49-22 ±2	92	15	2.3k	8/5	23 x 13 x 10	Opt.	Opt., Cloth	38	680.00 Pair
	Type E-II	Bass Ref.	8			1,¾	Domes		39-22 ±1.75	93	15	2.3k,10k	8/5	33 x 14 x 11	Opt.	Opt., Cloth	48	990.00 Pair
	Type A-III	Inf. Baf.	12	4½	Cone	1,¾	Domes		35-20 ±1.25	87	80	275,2.7k, 10k	4/4	47 x 24 x 13	Opt.	Opt., Cloth	130	4085.00 Pair
SONAB	OA-50	Bass Ref.	6½			1	Dome		28-20	89	25	2.5k-3k	8/7	15 x 18 x 13	Black Ven.	Black Metal	33½	800.00 Pair
	OA-51	Bass Ref.	7			1	Dome		32-20	88	25		8/7	17 x 12 x 11	Rswd. Ven.	Black Foam	28½	1000.00 Pair
	OA-52	Bass Ref.	7			1	Dome		27-20	89	25		8/7	16 x 21 x 15	Wal. Ven.	Black Foam	43½	1700.00 Pair
SONANCE	I	Inf. Baf.	6½			¾	Dome		75-18 ±4		5	3.5k	8/6	8 x 10 x 3	White	White Knit	8 Pair	
	II	Inf. Baf.	6½			2½	Cone		70-18 ±3	89	5	4k	8/8	12 x 9 x 3	White	White Knit	15 Pair	
	III	Inf. Baf.	6½			1	Dome		50-20 ±2	88	5	3k	8/6	12 x 9 x 3	White	White Knit	15 Pair	
	IV	Inf. Baf.	8			1	Dome	T	35-22 ±2		5	2.5k	8/6	12 x 16 x 3	White	White Knit	20 Pair	
	Subwoofer	Slot Vented Subwoof.	(2)6½						25-140 ±2	88	5	125	8/8	12 x 9 x 8	White	White Knit	14	
SONY	APM-66W	Bass Ref.	8		Flat Diaph.		Flat Diaph.	M	30-30 +4,-8	89	20	300,1.5k	6/	26 x 15 x 14	Oiled Wal.	Black	62¾	1000.00 Pair
	APM-22W	Bass Ref.	8		Flat Diaph.		Flat Diaph.		40-20 +4,-8	88	20	2.2k	6/	20 x 12 x 13	Opt.	Black	34¼	450.00 Pair
SOTA	Mini-monitor	Tuned Port	4			1¼	Dome		60-20 +0,-3	84	25		8/	12 x 10 x 6	Opt.	Opt.	18	725.00 Pair

Our new UX tapes deliver higher highs, lower lows and wider dynamic range.

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Each of these four new UX tapes represents the kind of advancement of music reproduction you've come to expect from Sony. UX-ES, for instance, offers the best frequency response of any Type II tape we've ever formulated. Yet UX-PRO actually goes one better with a ceramic tape guide that yields the most incredibly quiet tape housing Sony has ever produced.

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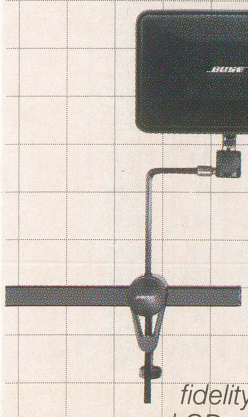
LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
SOUND ASSOCIATES	Enigma	Dipole Subwoof.	36x36					W	20-100 ±3	88	100	100	6/6	46 x 36 x 7	Opt.	Brown Knit	80	2500.00
	Chameleon ES	Sat. & Dipole Subwoof.	36x36				ES	W	20-20 ±3	86	100	100		Three Pieces	Opt.	Brown Knit		6200.00 Sys.
	Chameleon DR	Sat. & Dipole Subwoof.	36x36		Ribbon		Ribbon	W	20-20 ±3	86	100	100,400		Three Pieces	Opt.	Brown Knit		6200.00 Sys.
	Chameleon MC	Sat. & Dipole Subwoof.	36x36		Cone		Cone	W	20-20 ±3	86	100	100,250, 2.5k		Three Pieces	Opt.	Brown Knit		6200.00 Sys.
	Chameleon 2DR	Sat. & Dipole Subwoof.	(2) 36x36		Ribbon		Ribbon	W,M	20-20 ±3	89	200	100,400		Three Pieces	Opt.	Brown Knit		10,000. Sys.; w/ Amps, 16,000. Sys.
SOUND DYNAMICS	100 S MK II	Bass Ref.	6½			1	Dome		50-20 ±3	93	10	2k	8/4	9 x 16 x 9	Opt., Vinyl	Black	20	250.00 Pair
	100 CM	Bass Ref.	6			1	Dome		38-23 ±3	96	5	2k	8/4	17 x 9 x 10	Wal. Vinyl	Black	20	300.00 Pair w/ Stands
	500 CM	Bass Ref.	10			1	Dome		34-23 ±3	98.5	10	2k	8/4	23 x 12 x 12	Wal. Vinyl	Black	38	400.00 Pair w/ Stands
	700 CM	Bass Ref.	12			1	Dome		32-23 ±3	101	15	1.9k	8/4	28 x 14 x 12	Wal. Vinyl	Black	45	600.00 Pair w/ Stands
	1500 CM	Bass Ref.	15			1	Dome		28-23 ±3	102	20	1.8k	8/4	35 x 18 x 16	Wal. Vinyl	Black	90	900.00 Pair
	S Series 200	Bass Ref.	10			1	Dome		36-22 ±3	99	8	2k	8/4	23 x 12 x 11	Wal. Vinyl	Black	35	330.00 Pair
SOUND-LAB	DynaStat	ES & Dynamic	8			48x4	ES	T	35-22 ±2	88	50	200	8/6	72 x 15 x 3	Cloth	Black Knit	65	1795.00 Pair
	A-1	ES						T	30-22 ±2	87	100		4/3	81 x 35 x 11	Opt., Wood	Opt., Linen	185	8750.00 Pair
	A-2x	ES	48x20			48x4	ES	T	34-22	88	50	200	8/6	57 x 28 x 3	Opt., Wood	Opt., Linen	88	2950.00 Pair
	A-3	ES						T	32-22	87	100		4/3	73 x 31 x 9	Opt., Wood	Opt., Linen	145	5750.00 Pair
	A-4	ES	61x20			61x4	ES	T	33-22 ±2	88	100	200	8/6	70 x 28 x 3	Opt., Wood	Opt., Linen	105	3850.00 Pair
	A-6	ES	72x40			72x4	ES	T	28-22 ±2	88	100	200	8/5	81 x 46 x 3	Opt., Wood	Opt., Linen	205	9500.00 Pair
SPANDAU SPEAKER SYSTEMS	SP-203A	Bass Ref.	8			1	Dome	T	40-20 ±3	91	5	3.5k	8/4	30 x 15 x 12	Opt.	Black Cloth	40	625.00 Pair
	SP-203B	Bass Ref.	8	2	Dome	1	Dome	M,T	36-20 ±3	92	5	800,5k	8/4	37 x 18 x 15	Opt.	Black Cloth	65	975.00 Pair
	SP-230A	Bass Ref.	12,6	2		1		M,T	35-20 ±3	90	10	150,800, 5k	8/4.5	45 x 22 x 19	Opt.	Black Cloth	110	1400.00 Pair
SPEAKERLAB	DAS2	Tuned Port	5¼			¾	Dome		50-21 ±3	91	5	2.5k	4/6	13 x 7 x 8	Opt., Wood	Opt., Knit	13	110.00
	DAS3	Tuned Port	6½			¾	Dome		42-21 ±3	91	10	2.5k	4/3.3	21 x 8 x 10	Opt., Wood	Opt., Knit	23	165.00
	DAS4	Tuned Port	8			¾	Dome		36-21 ±3	92	20	2.5k	4/3.3	28 x 10 x 12	Opt., Wood	Opt., Knit	39	219.00
	DAS5	Tuned Port	8	6½	Cone	1	Dome		34-21 ±3	93	20	180,2.5k	4/3.2	13 x 11 x 13	Opt., Wood	Opt., Knit	47	329.00
	DAS6	Tuned Port	10	8	Cone	1	Dome		30-21 ±3	94	20	180,2.5k	4/3.4	36 x 12 x 14	Opt., Wood	Opt., Knit	62	439.00
	DAS7	Tuned Port	10,12	6½	Cone	1	Dome		25-21 ±3	94	20	180,350, 3k	4/3.2	38 x 14 x 16	Opt., Wood	Opt., Knit	86	549.00
	DAS8	Tuned Port	10,12	6½,3	Cone, Dome	1	Dome		23-21 ±3	94	20	150,350, 1.5k,5k	4/3.2	46 x 16 x 13	Opt., Wood	Opt., Knit	105	899.00
	DAS SW	Subwoof.	10						30-160 ±3	92	20	150	8/6	18 x 18 x 18	Opt., Wood	Opt., Knit	62	359.00
SPECTRUM	108A&AB	Bass Ref.	8			1½			48-20 ±3	92	10	2.3k	8/	14 x 11 x 9	Opt., Vinyl	Black Foam	34 Pair	229.00 Pair
	108AW&AO	Bass Ref.	8			1½			48-20 ±3	92	10	2.3k	8/	14 x 11 x 9	Opt., Wood	Black Foam	34 Pair	299.00 Pair
	208A&AB	Bass Ref.	8			1½			38-20 ±3	91	10	2.3k	8/	25 x 14 x 10	Opt., Vinyl	Black Foam	38	349.00 Pair
	208AW&AO	Bass Ref.	8			1½			38-20 ±3	91	10	2.3k	8/	25 x 14 x 10	Opt., Wood	Black Foam	38	449.00 Pair
	410	Bass Ref.	10			1			18-22	89	30	1.5k	8/	39 x 14 x 12	Opt., Wood	Black Knit	68	749.00 Pair
SPENDOR	Prelude	Bass Ref.	8			1	Dome		50-20 ±3	90	20	3k	8/7	20 x 10 x 11	Opt.	Black Cloth	28	500.00 Pair
	LS3/5A	Inf. Baf.	4½			1	Dome		80-20 ±3	83	25	3k	15/8	12 x 7 x 7	Opt., Wood	Black Cloth	12	450.00 Pair
	SP-2	Bass Ref.	8			¾	Dome		50-20 ±3	88	20	3k	8/7	20 x 10 x 11	Opt., Wood	Black Cloth	32	650.00 Pair
	BC-1	Bass Ref.	8			1¼,¾	Domes		45-18 ±3	85	25	3k,13k	8/7	25 x 12 x 12	Opt., Wood	Black Cloth	38	850.00 Pair
	SP-1	Bass Ref.	8			1¼,¾	Domes		45-20 ±3	87	25	3k,13k	8/7	25 x 12 x 12	Opt., Wood	Black Cloth	42	950.00 Pair
	SA-3	Bass Ref.	12			1½	Dome		38-20 ±2	90	40	2k	8/7	34 x 15 x 18	Opt., Wood	Black Foam	85	1900.00 Pair

FREE! 3 Columbia CD's or a $30 Rebate!
when you purchase a RoomMate® system with travel bag and mounting arms.
See dealer for details.

Toteworthy Stereo

Today, a good stereo's place isn't necessarily just in the home. Plug the new Bose® RoomMate® powered speaker system into a personal stereo, and you'll have a complete, compact, room-filling stereo system that you can use nearly anywhere. Or combine the RoomMate system with one of the new generation of portable compact disc players, and you'll have a digital stereo system that's as compact and easy to carry as a camera outfit!



The RoomMate system can create true high fidelity out of personal stereos and CD players because it has its own built-in amplifier and active equalizer. In fact, the RoomMate system uses some of the same audio technology that made the Bose 901® speaker an audio legend. The RoomMate system works with keyboards, personal computers, and virtually anything equipped with a headphone jack. And there's a line of accessories available such as mounting arms, wall brackets, and the travel bag shown above. Best of all, the RoomMate system's price is very easy to live with.

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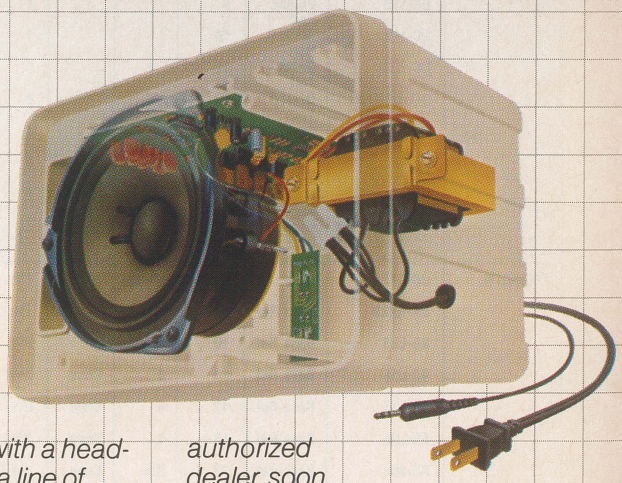

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LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Supertweeter = ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
SPICA	TC-50	Sealed	6½			1	Dome		56-15 ±3	83	25	2.7k	4/	13 x 16 x 12	Opt., Wood	Black Cloth	45	450.00 Pair
	Servo	Active Servo Subwoof.	8					W	-3 dB@ 25 Hz		50 Inc.	88		18 x 15 x 16	Opt., Wood	Black Cloth	53	595.00
STAX	ELS-F81 New	ES Planar							40-20	73	100		8/4	18 x 44 x 11	Teak	Beige	44	3995.00 Pair
SUMO	Opus Two	Inf. Baf.	6½			1	Dome	No	42-24 +0,-3	85	50	2.5k	4/3.4	38 x 11 x 5	Opt.	Black Knit	27	699.00 Pair
	Opus Three	Inf. Baf.	6½			1	Dome	No	42-24 +0,-3	85	50	2.5k	4/3.4	11 x 10 x 16	Opt.	Black Knit	25	649.00 Pair
	Samson	Ported Subwoof.	15					No	-3 dB@ 21 Hz	91	50		8/7	30 x 22 x 19	Opt.	Black Knit	85	649.00; w/Amp, 1249.00
SURROUND SOUND	SSI-2000	Bass Ref.	8			2	Dome	No	32-18 ±3	90	15		8/3	10 Dia. x 38	White Lacq.	Black Cloth	20	199.00
SYMDEX AUDIO SYSTEMS	Sigma Series II	Ac. Sus.		6½	Cone	1	Dome		60-20	84		2.8k	8/	6 x 10 x 22	Wal.	Black Foam	25	895.00 Pair
	Omega Series II	Add-On Subwoof.	10						35-100	84		100	8/	14 x 14 x 31	Wal.	Black Foam	65	1495.00 Pair
	Epsilon	Ac. Sus.	10	6½	Cone	1	Dome		35-20	84		100,2.8k	8/	13 x 13 x 48	Oak	Black Knit	105	1495.00 Pair
SYNTHESIS	LM 20	Bass Ref.	6½			1	Dome		52-18 ±3	90	20	1.5k	8/	10 x 14 x 14	Oiled Oak	Brown Foam	22	600.00 Pair
	LM 200	Bass Ref.	6½			1	Dome		44-20 ±3	89	20	1.25k	8/	10 x 10 x 34	Oiled Oak	Opt., Knit	40	850.00 Pair
	LM 250	Bass Ref.	8			1	Dome		42-20 ±3	91	20	1.25k	8/	11 x 11 x 34	Oiled Oak	Opt., Knit	44	1185.00 Pair
	LM 250D	Bass Ref.	8			1	Dome		42-20 ±3	91	20	1.25k	8/	11 x 11 x 34	Oiled Oak	Opt., Knit	47	1450.00 Pair
	LM 300	Bass Ref.	10	7	Cone	1	Dome	T	30-20 ±3	91	20	85,1.25k	8/	14 x 15 x 44	Oiled Oak	Opt., Knit	90	1950.00 Pair
TANNOY	M-20 Mercury	Ducted Port	8			1	Dome		55-20	93	10	3k	8/6	19 x 11 x 9	Wal. Vinyl	Brown Knit	12	398.00 Pair
	V-30 Venus	Ducted Port	8			1	Dome		50-20	93	10	3k	8/6	21 x 12 x 10	Oiled Wal.	Brown Knit	21	648.00 Pair
	C-10	Ducted Port	8			1	Dome		57-20	93	10	3.5k	8/6	19 x 11 x 9	Opt.	Black Knit	11	298.00 Pair
	DC-110	Ducted Port	8			1	Coax Horn		52-20	93	10	3.5k	8/6	19 x 10 x 10	Wal. Vinyl	Brown Knit	16	549.00 Pair
	DC-125	Ducted Port	10			1	Coax Horn		50-20	93	10	3.5k	8/6	22 x 13 x 11	Oiled Wal.	Brown Knit	27.6	699.00 Pair
	DC-2000	Ducted Port	10			1	Coax Horn		47-20	93	10	3.5k	8/6	31 x 13 x 11	Oiled Wal.	Brown Knit	55	998.00 Pair
	DC-4000	Ducted Port	12			2	Coax Horn		47-20	96	10	1.2k	8/6	31 x 16 x 15	Oiled Wal.	Brown Knit	63	1598.00 Pair
	DC-6000	Ducted Port	15			2	Coax Horn		40-20	97	10	1k	8/6	38 x 19 x 15	Oiled Wal.	Brown Knit	78	1998.00 Pair
	Stirling	Ported	10			2	Coax Horn	T	35-20	93	10	1.2k	8/6	28 x 19 x 12	Oiled Wal.	Beige Knit	49	2358.00 Pair
	G.R.F. Memory	Ducted Port	15			2	Coax Horn	M,T	29-20	95	10	1k	8/6	44 x 32 x 19	Oiled Wal.	Beige Knit	137	3598.00 Pair
	Westminster	Horn	15			2	Coax Horn	M,T	18-20	96	10	1k	8/6	51 x 41 x 25	Oiled Wal.	Beige Knit	308	6000.00 Pair
TECHNICS	SB-RX30	Bass. Ref.	9			1⅛	Flat	No	44-30	88		2.5k	6/	10 x 15 x 9	Sim. Wood	Brown	16.5	400.00 Pair
	SB-RX50	Bass Ref.	9½			1⅛	Flat	T	30-48	87		2.2k	6/	12 x 19 x 11	Sim. Wood	Brown	36.4	400.00
	SB-L35	Bass Ref.	10			2⅛	Cone	No	42-22	92		4k	8/	13 x 23 x 9	Sim. Wood	Black Knit	16.3	150.00 Pair
	SB-L55	Bass Ref.	10	4	Cone	2⅛	Cone	No	37-22	92		2.5k,5k	8/	13 x 25 x 10	Sim. Wood	Black Knit	18.7	220.00 Pair
	SB-L75	Bass Ref.	12	4	Cone	2⅛	Cone	No	33-22	92		2.5k,5k	8/	14 x 27 x 13	Sim. Wood	Black Knit	23.8	275.00 Pair
	SB-L95	Bass Ref.	15	4	Cone	2⅛	Cone	No	32-22	93		3k,5k	8/	18 x 31 x 13	Sim. Wood	Black Knit	35.9	175.00 Pair
	SB-M3	Bass Ref.	13	3⅛	Cone	1⅛	Cone	M,T	150-15 ±1.5	90		450,3.5k	6/	16 x 27 x 13		Brown Net	68.3	1000.00
	SB-F1MK2	Ac. Sus.	4¾			1⅛	Cone	No	48-35	86		2k	8/	6 x 9 x 6	Silv.		6.4	275.00 Pair
	SB-F2MK2	Ac. Sus.	5½			1⅛	Flat		55-33	88		2.5k	8/4	6 x 10 x 7	Silv.		11	300.00 Pair
	SB-R200	Flat Coax					Flat Coax	T	55-30	89		2.7k	8/	24 x 15 x 4	Sim. Wal.	Black Knit	19.8	600.00
	SB-R100	Flat Coax					Flat Coax	No	55-30	87		2k	8/	13 x 13 x 3		Black Metal	9.9	260.00 Pair
	SB-X300A	Bass Ref.	9	2	Cone	1⅛	Cone	No	38-33	90		900,3k	8/7	12 x 23 x 11		Black Knit	20.9	300.00 Pair
	SB-X500A	Bass Ref.	10	3⅛	Cone	1⅛	Cone	No	30-33	90		900,2.5k	8/7	14 x 25 x 13		Black Knit	33	400.00 Pair
	SB-X700A	Bass Ref.	12	3⅛	Cone	1⅛	Cone	M,T	35-30	90		900,2.5k	8/7	15 x 27 x 13		Black Knit	39.6	550.00 Pair

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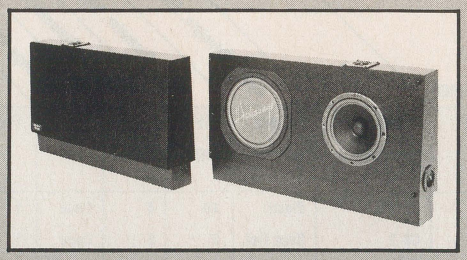

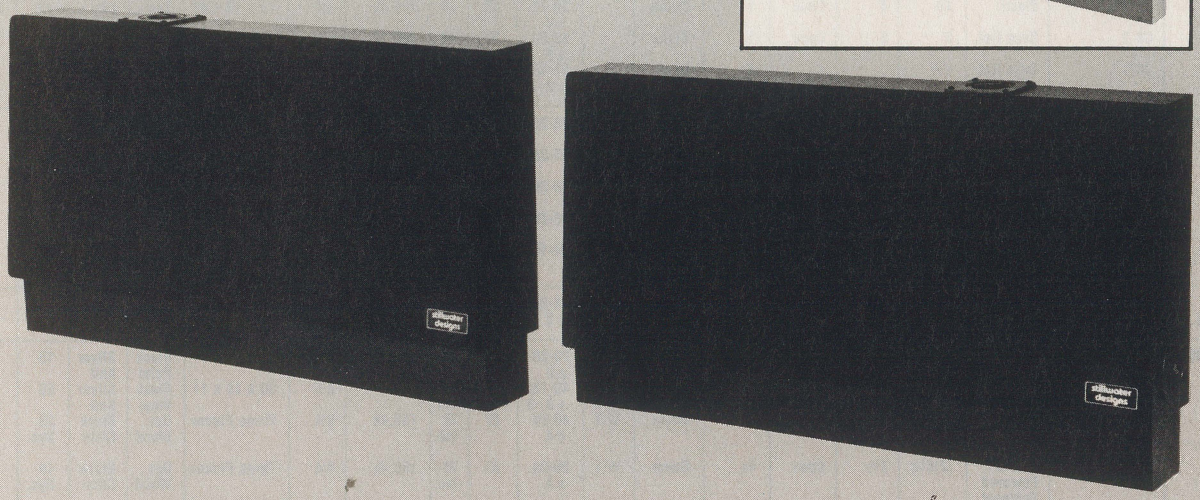

Introducing the HIDEAWAYS™ — Stillwater Designs' new behind-the-couch surround sound speakers. Designed for use with the new generation of surround sound video decoders, the HIDEAWAYS are fully compatible with any home stereo amplifier or receiver as well. Surround sound video is recreated with a realism you can feel as well as hear!

When the HIDEAWAYS are paired with a set of stereo speakers for recorded music listening, the results are breathtaking—literally placing you on the soundstage while listening from your couch. This is an experience impossible to duplicate with standard stereo speakers. The HIDEAWAYS are truly a new experience in musical enjoyment!

Contemporary ultra-slim design allows the HIDEAWAYS to slip between your couch and wall with minimum space requirements; they are completely out of sight! Should you prefer your main speakers hidden, the HIDEAWAYS provide excellent sound just by themselves.

Because the critical high frequencies are focused upward, the sound is clean and clear from behind your couch. Eight inch polypropolene woofers and ten inch passive radiators reproduce bass and mid-range with startling realism and definition. The HIDEAWAYS must be heard and felt to be believed!

SPECIFICATIONS

Frequency Response	35 Hz to 20,000 Hz
Min-Max Amplifier Power	10-100 Watts/Channel
Impedance	8 Ohms
Speaker Components	1" Dome Tweeter, 8" Polypropolene Woofer, 10" Passive Radiator
Crossover	3000 Hz
Dimensions	17" high x 30" wide x 5¼" deep (bottom), 4" deep (top)

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LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
TENNESSEE SOUND	Symphony I	Ac. Sus.	6½			1¾	Cone			88	35	1.8k	10.5/8.5	16 x 13 x 11	Opt., Wood	Opt.	21	550.00 Pair
	Symphony II	Ac. Sus. Subwoof.	(2)8							88	35		8/6	33 x 21 x 19	Opt., Wood	Opt.	65	1200.00 Pair
THIEL	CS 3.5	Electr.	10	4	Cone	1	Dome		20-20 ±2	88	40	400,3k	4/4	13 x 13 x 41	Teak	Black Cloth	75	2450.00 Pair
	CS 2	Bass Ref.	8	3	Cone	1	Dome		38-20 ±2	87	40	800,3k	6/5	12 x 12 x 39	Teak	Black Cloth	62	1550.00 Pair
	CS 1	Bass Ref.	6½			1	Dome		57-18 ±2	87	40	3k	6/5	10 x 10 x 36	Teak	Black Cloth	41	950.00 Pair
3D ACOUSTICS	Cube	Ac. Sus.	6			¾	Dome		70-20	88	15		8/5	10 x 10 x 10	Opt.	Black	15	240.00 Pair
	Column	Pas. Rad.	6			1	Dome		35-20	88	25		8/5	12 x 31 x 11	Opt.	Black	42	490.00 Pair
	610 System	Sat. & Subwoof.	10	6	Cone	1	Dome		30-20	88	30		8/5	Three Pieces	Opt.	Black	79 Sys.	590.00 Sys.
	610 Surround	Sat. & Subwoof.	10	6	Cone	1	Dome		30-20	88	30		16/10	Five Pieces	Opt.	Black	109 Sys.	885.00 Sys.
	10	Ac. Sus. Subwoof.	10						30-100	88	30	100		16 x 24 x 14	Opt.	None	49	295.00
TIARE ACOUSTICS	TL-17	Trans. Line	7			1.1	Dome		48-22 ±3	87	50	2.3k	8/6	9 x 12 x 39	Cloth	Cloth	45	895.00 Pair
TRIAD DESIGN	HSS-400	Inf. Baf.	8			1	Dome		90-20 ±3	89	30	2k	8/6	18 x 11 x 9	Black Paint	Silver Knit	15	450.00 Pair
	Bass Base	Powered Subwoof.	8						40-125 +0,-3		70 Inc.		8/8	30 x 18 x 14	Black Vinyl	Silver Knit	50	260.00
	System One	Sat. & Powered Subwoof.	6½	3½	Cone	¾	Dome	W,T	40-20 ±4	87	70 Inc.	160,4k	8/4	Three Pieces	Opt., Wood	Black Cloth	23 Sys.	500.00 Sys.
	System Two	Sat. & Powered Subwoof.	(2)6½	3½	Cone	¾	Dome	W,T	35-20 ±4	87	70 Inc.	160,4k	8/4	Three Pieces	Opt., Wood	Black Cloth	46 Sys.	800.00 Sys.
	System Three/3	Sat. & Powered Subwoof.	8	6½	Cone	1	Dome	W	38-20 ±3	88	70 Inc.	100,2.5k	8/6	Three Pieces	Opt., Wood	Black Cloth	44 Sys.	600.00 Sys.
	System Four	Sat. & Powered Subwoof.	(2)8	8	Cone	1	Dome	W	32-20 ±3	88	70 Inc.	100,2.5k	8/6	Four Pieces	Black Paint	Silver Cloth	70 Sys.	1250.00 Sys.
	HSS-300	Inf. Baf.		6½	Cone	1	Dome		100-20 ±3	88	20	2.5k	8/6	12 x 8 x 4	Opt., Wood	Black Cloth	28 Pair	350.00 Pair
	HSW-200	Sat. Powered Subwoof.	(2)6½					W	42-120 +0,-3		70 Inc.		8/8	8 x 15 x 11	Opt., Wood	Black Cloth	22	300.00
	HSW-300	Powered Subwoof.	8					W	38-88 +0,-3		70 Inc.		8/8	10 x 12 x 11	Opt., Wood	Black Cloth	21	250.00
	HSW-400	Powered Subwoof.	(2)8					W	45-115 +0,-3		70 Inc.		8/8	15 x 15 x 13	Opt.	Opt., Cloth	40	400.00
ULTRALINEAR	1530	Inf. Baf.	15	4½	Cone	2½	Cone	M,T	40-22 ±5	92.5	10	1k,5k	6/3	14 x 18 x 30	Wal. Vinyl	Black Knit	55	358.00 Pair
	1230	Inf. Baf.	12	4½	Cone	2½	Cone		45-22 ±5	92.5	5	1k,5k	6/3	14 x 11 x 26	Wal. Vinyl	Black Knit	60 Pair	298.00 Pair
	1030	Inf. Baf.	10	4½	Cone	2½	Cone		50-22 ±5	92.5	5	1k,5k	6/3	14 x 11 x 26	Wal. Vinyl	Black Knit	60 Pair	258.00 Pair
	208	Inf. Baf.	8			2½	Cone		60-22 ±5	92.5	5	2.5k	6/3	8 x 11 x 18	Wal. Vinyl	Black Knit	36 Pair	198.00 Pair
ULTRAPHONICS	Ultra Mini	Ac. Sus.	5¼			1	Dome		60-20 ±4	90	15	3k	8/	12 x 8 x 7	Wood Lam.	Black	24 Pair	450.00 Pair
	26P	Vented	6½			1	Dome		40-22 ±3	93	15	3k	8/	16 x 10 x 10	Wood Lam.	Black	28 Pair	600.00 Pair
	28P	Ac. Sus.	8			1	Dome		38-22 ±4	92	20	3k	8/	22 x 12 x 8	Wood Lam.	Black	32 Pair	600.00 Pair
	28J	Ac. Sus.	8			1	Dome		50-20 ±5	90	20	2.5k	8/	18 x 10 x 6	Wal. Vinyl	Black	24 Pair	250.00 Pair
	Mesa I	Vented	8			1	Dome		40-22 ±3	92	20	3k	8/	24 x 11 x 12	Wood Lam.	Black	40 Pair	900.00 Pair
	310P	Ac. Sus.	10	5	Cone	1	Dome		40-22 ±3	94	20	700,4k	8/	25 x 14 x 10	Wood Lam.	Black	70 Pair	950.00 Pair
	310J	Ac. Sus.	10	5	Cone	1	Dome		40-20 ±5	89	20	700,4k	8/	29 x 13 x 10	Wal. Vinyl	Black	70 Pair	600.00 Pair
	310N	Vented	10	5	Cone	1	Dome		32-22 ±3	90	15	700,3k	8/	29 x 13 x 10	Wood Lam.	Black	90 Pair	1100.00 Pair
	Panel	Ac. Sus.	10	5	Cone	1	Dome		38-22 ±3	90	30	600,4k	8/	41 x 21 x 7	Wood Lam.	Black	100 Pair	1300.00 Pair
	410P	Vented	10	5	Cone	1,3	Dome, Piezo		38-40 ±3	94	15	700,4k, 10k	8/	25 x 14 x 10	Wood Lam.	Black	80 Pair	1000.00 Pair
	412P	Vented	12	5	Cone	1,3	Dome, Piezo		28-40 ±3	95	15	700,4k, 10k	8/	27 x 16 x 12	Wood Lam.	Black	90 Pair	1200.00 Pair
	313N	Vented	13	5	Cone	1	Dome		30-20 ±3	91	20	600,3k	8/	32 x 15 x 13	Wood Lam.	Black	130 Pair	1500.00 Pair
	Mesa II	Trans. Line	12	3	Dome	1,2	Domes		25-25 ±2	91	40	400,3k, 10k	8/	34 x 12 x 11	Opt.	Opt.	160 Pair	3000.00 Pair
	Shelf Subwoofer	Vented Subwoof.	10						22-120	89	30	120	8/4	25 x 14 x 10	Wood Lam.	Black	40	600.00
	Subwoofer	Vented Subwoof.	15						20-100	91	30	100	4/	30 x 20 x 12	Wood Lam.	Black	78	900.00
	312P	Vented	12	2	Dome	1	Dome		28-30 ±3	94	40	700,4k	8/	32 x 15 x 13	Wood Lam.	Black Knit	130 Pair	1500.00 Pair
	415P	Vented	15	3	Dome	1, (2)3	Dome, Piezos		20-30 ±3	99	30	700,4k, 10k	8/	36 x 20 x 12	Wood Lam.	Black	180 Pair	2800.00 Pair

LOUDSPEAKERS

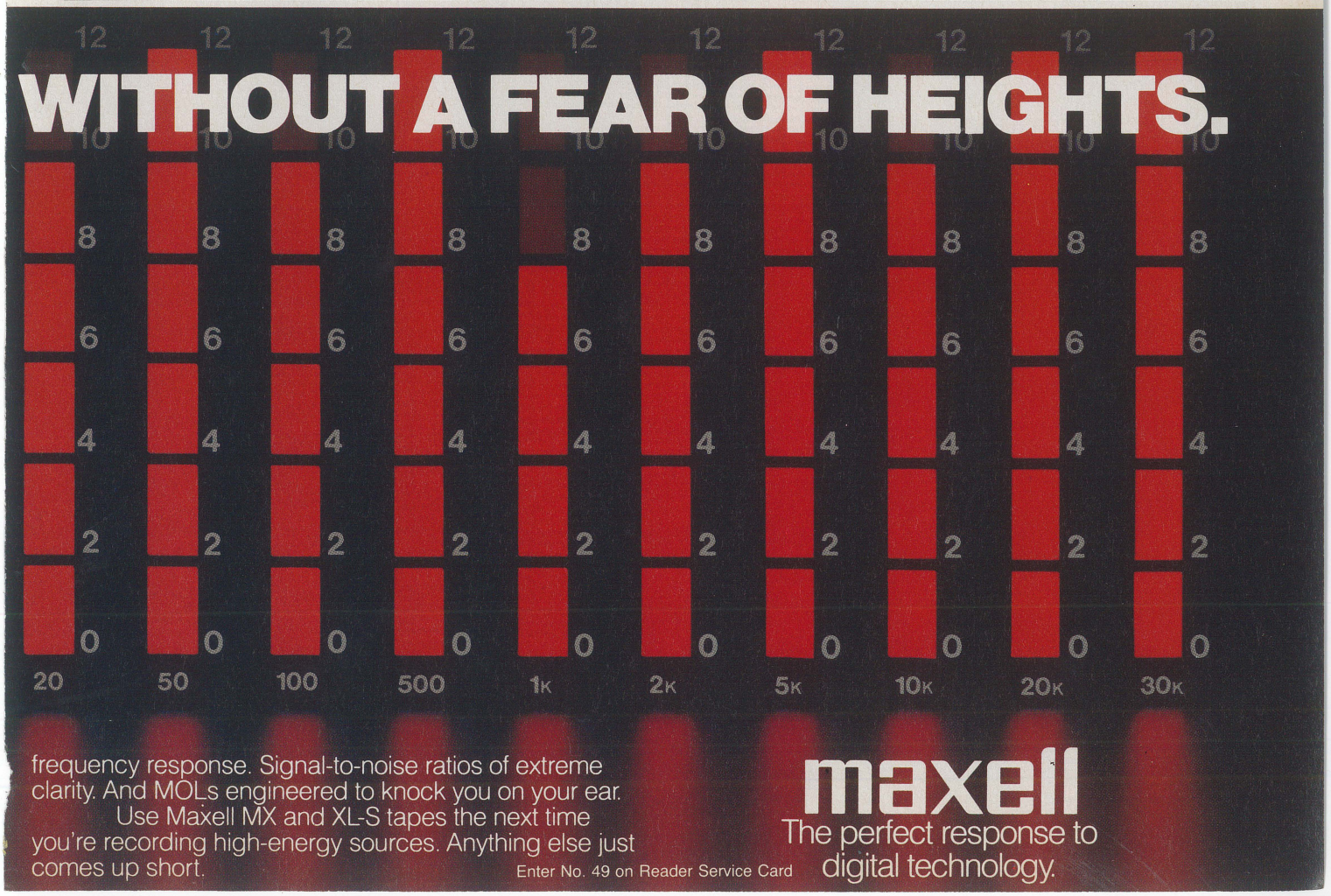
MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
UNITY AUDIO	4	Pressure Rel.	7			1	Dome		50-19 ±2	89	30	2.2k	5/4	9 x 9 x 13	Opt.	Black Knit	30 Pair	500.00 Pair
	7	Sealed Box	(2)7			1	Dome		35-19 ±2	89	50	2.2k	6/4	9 x 9 x 23	Opt.	Black Knit	75 Pair	1100.00 Pair w/ Stands
	Parm	Sat. & Subwoof.	(2)9	7	Cone	1	Dome		26-24 ±1.5	90	50	2.3k	6/4	Four Pieces	Opt.	Black Knit	180 Sys.	2950.00 Sys.
	DC II	Sealed Box Subwoof.	(2)9						26-300 ±1.5	90	100	180	5/4	12 x 12 x 25	Opt.	Black Knit	100 Pair	995.00 Pair
	DC I	Sealed Box Subwoof.	(2)12						21-200 ±1.5	93	100	170	5/4	16 x 14 x 30	Opt.	Black Knit	150 Pair	2600.00 Pair
	Foundation	Sealed Box Subwoof.	(2)18						16-120 ±2	98	200	80	5/4	24 x 24 x 35	Opt.	Black Knit	340 Pair	7500.00 Pair
VANDERSTEEN AUDIO	1B	Trans. Line	8			1	Dome	T	38-20 ±3	90	30	3k	8/6	12 x 10 x 36	Opt., Wood	Opt., Knit	50	650.00 Pair
	2C	Pas. Rad.	8	4½	Cone	1	Dome	M,T	29-21 ±3	88	50	500,5k	8/6	16 x 10 x 36	Opt., Wood	Opt., Knit	63	1125.00 Pair
	4	Inf. Baf.	8, (2)12	4½	Cone	1⅛, ¾	Domes	M,T	26-30 ±3	88	70	80,500, 5k,13k	8/4	18 x 17 x 52	Oak	Opt., Knit	150	3850.00 Pair
	2W	Powered Inf. Baf. Subwoof.	(3)8						26-80 ±3		300 Inc.	80		18 x 17 x 18	Opt., Wood	Opt., Knit	90	1200.00 w/Amp & Xover
VELODYNE ACOUSTICS	ULD-12	Powered Servo Subwoof.	12					W	20-Xover ±3	95	350 Inc.	85 Std./ Opt.	8/6	21 x 16 x 17	Opt.	None	45	699.00
	ULD-15	Powered Servo Subwoof.	15					W	20-Xover ±3	95	350 Inc.	85 Std./ Opt.	8/6	22 x 17 x 18	Opt.	None	63	1250.00 w/Amp
	ULD-18	Powered Servo Subwoof.	18					W	15-Xover ±3	97	350 Inc.	85 Std./ Opt.	8/6	23 x 31 x 21	Opt.	None	105	1850.00 w/Amp
VIBE ACOUSTICS	M-1 Mini Monitor	Ac. Sus.	6½			1	Dome		70-20 ±3	87	15	3.5k	8/6	12 x 8 x 6	Oiled Wal.	Black Knit	15	350.00 Pair
	STD-1 Studio Monitor	Bass Ref.	12	2	Dome	1	Dome	M,T	38-20 ±3	91	15	700,4k	8/5	29 x 15 x 14	Oiled Wal.	Black Knit	50	770.00 Pair
VIDEOTON	Mini-Max	Inf. Baf.	5¼		Cone	1	Dome		55-20 ±4	88	15	3k	8/6	11 x 7 x 8	Teak	Brown	20 Pair	180.00 Pair
VINTEC ACOUSTICS	Valour	Tuned Port	6½			1	Dome		37-22 ±2	89	15	1.9k	8/	23 x 10 x 11	Opt., Wood	Black Knit	30	760.00 Pair
	Vinny	Ac. Sus.	(2)4½			1	Dome		49-22 ±1.5	90	20	1.7k	4/	16 x 8 x 10	Opt., Wood	Black Knit	20	850.00 Pair
	Vanguard	Tuned Port	8			1	Dome		25-22 ±2	90	20	1.5k	6/	25 x 12 x 14	Opt., Wood	Black Knit	60	1500.00 Pair
	Vesuvius	Vented Subwoof.	(2)10						18-200 ±2	93	40		4/	31 x 21 x 22	Opt., Wood	Black Knit	120	1100.00
VMPS	QSO 404	Ported	8			1	Dome	T	45-18	92	10	2.5k	8/6	18 x 12 x 8	Oiled Wal.	Black Cloth	24	164.00
	QSO 606	Ported	10			1	Dome	T	38-18	92	10	2.5k	8/6	20 x 13 x 12	Oiled Wal.	Black Cloth	35	239.00
	QSO 808	Ported	12	5	Cone	1	Dome	M,T	34-20	94	10	600,5k	8/6	26 x 15 x 11	Oiled Wal.	Black Cloth	52	315.00
	Mini Tower II	Pas. Rad.	12	5	Cone	2,1	Piezo, Dome	M,T, ST	28-30 +0,-3	95	20	80,400, 4k,12k	8/6	35 x 15 x 15	Oiled Wal.	Black Cloth	65	439.00
	Tower II Holosonic	Multiband Bass	(3)12	5	Cone	(2)2, 1	Domes, Piezo	M,T, ST	22-30 +0,-3	95	20	80,400, 4k,12k	8/6	43 x 15 x 15	Oiled Wal.	Black Cloth	90	599.00
	Super Tower/R Holosonic	Multiband Bass	(2)15, (12)	(2)5	Cones	(2)2, (2)1	Domes, Ribbons	M,T, ST	20-50 +0,-3	98	20	80,400, 4k,12k	8/6	49 x 22 x 17	Oiled Wal.	Black Cloth	165	969.00
	Super Tower IIa/R Holosonic	Multiband Bass	(2)15, (3)12	(4)5	Cones	(5)1	Domes, Ribbon	M,T, ST	17-50 +0,-3	99	20	80,400, 4k,12k	8/6	76 x 22 x 17	Oiled Wal.	Black Cloth	300	1699.00
	Widerange Ribbon & Space Boxes	Multiband Bass	(2)15, (2)12, 8	69L	Ribbon	2L	Ribbon	M,T	19-50 +0,-3	94	20, 50	60,80, 280,15k	8/3	Five Pieces	Oiled Wal.	Black Cloth	700 Sys.	7500.00 Sys.
	The Subwoofer	Pas. Rad. Subwoof.	12						19-600 +0,-3	94	20	Var.	8/6	27 x 22 x 17	Oiled Wal.	Black Cloth	90	375.00
	The Larger Subwoofer	Pas. Rad. Subwoof.	15,12						17-300 +0,-3	96	20	Var.	4/4	39 x 22 x 17	Oiled Wal.	Black Cloth	120	549.00
	The Smaller Subwoofer	Pas. Rad. Subwoof.	(2)12						28-600 ±3	92	20		8/6	26 x 16 x 15	Oiled Wal.	Black Cloth	52	299.00
WATKINS ENGINEERING	WE-1a	Dual Drive	(3)8	(2)5	Cones	1⅛	Dome	T	22-23 ±2	90	50	40,100, 1.5k	4/3	13 x 32 x 53	Oak	Brown Knit	129	2995.00 Pair
WESTLAKE AUDIO	BBSM-4	Ported	(2)4			¾	Dome	No		89	100	1.5k	4/2	8 x 15 x 10	Opt.	Opt.	25	549.00
	BBSM-5	Ported	(2)5			1¼	Dome	No	65-20 ±3	90	100	1.2k	4/2	11 x 18 x 10	Opt.	Opt.	35	649.00
	BBSM-6	Ported	(2)6	3½	Cone	1	Dome	No	70-18 ±3	91	100	600,6k	4/2	11 x 22 x 13	Opt.	Opt.	43	895.00
	BBSM-10	Ported	(2)10	6½	Cone	1¼	Dome	No	60-15 ±3	93	200	600,4.5k	4/2	16 x 30 x 22	Opt.	Opt.	90	1295.00
	BBSM-12	Ported	(2)12	6½	Cone	1¼	Dome	No	50-15 ±3	94	200	500,4k	4/2	19 x 34 x 23	Opt.	Opt.	123	1495.00
	BBSM-15	Ported	(2)15	10	Cone	2	Horn	No	38-15 ±3	96	250	350,1.5k	4/2		Black	None	375	2595.00

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer = W, Midrange = M, Tweeter = T, Supertweeter = ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
WHARFEDALE	Diamond	Ported	4			¾	Dome		50-20 ±3	86	15		8/6	9 x 7 x 8	Opt.	Black Knit		225.00 Pair
	708	Ac. Sus.	8			¾	Dome		40-20 ±3	87	15		8/6	19 x 10 x 9	Opt.	Black Knit		750.00 Pair
	Option One	Dipole & Powered Subwoof.	(6)8	(2)4	Cones	¾	Dome		25-25 ±3		600 Inc.			Two Pieces per Side	White	Black Knit		16,000. Pair
	507	Ported	8			¾	Dome		42-25 ±3	90	15		8/6	19 x 10 x 11	Opt., Wood	Black Knit		425.00 Pair
	510	Ported	8	4	Cone	¾	Dome		35-25 ±3	90	15		8/6	24 x 11 x 11	Opt., Wood	Black Knit		595.00 Pair
	512	Ported	(2)8	4	Cone	¾	Dome		30-25 ±3	90	15		8/6	34 x 11 x 11	Opt., Wood	Black Knit		795.00 Pair
	Option Two	Dipole	(4)8	(2)4	Cones	¾	Dome		50-25 ±3	87	50		4/		Black	Black Knit		3500.00 Pair
	Active Diamond	Powered Ported	4			¾	Dome		50-20 ±3		20 Inc.			9 x 7 x 8	Opt., Lacq.	Black Knit		300.00 Pair
	Delta 3	Ac. Sus.	6			¾	Dome		50-20 ±3	90	15		8/6	15 x 9 x 7	Opt.	Black Knit		175.00 Pair
	Delta 5	Ac. Sus.	8			¾	Dome		45-25 ±3	90	15		8/6	19 x 10 x 8	Opt.	Black Knit		245.00 Pair
	Delta 7	Ac. Sus.	8	4	Cone	¾	Dome		40-25 ±3	90	15		8/6	23 x 11 x 8	Opt.	Black Knit		295.00 Pair
	Delta 9	Ac. Sus.	10	4	Cone	¾	Dome		35-25 ±3	90	15		8/6	27 x 12 x 9	Opt.	Black Knit		450.00 Pair
	Delta 11	Ac. Sus.	(2)10	4	Cone	¾	Dome		32-25 ±3	90	15		8/6	34 x 12 x 11	Opt.	Black Knit		495.00 Pair
	504	Ported	4			¾	Dome		50-40 ±3	86	15		8/6	11 x 7 x 8	Black Vinyl	Black Knit		325.00 Pair
WILSON AUDIO SPECIALTIES	WAMM Series IV	Sat. & Subwoof.	18	(2)5, (2)8¼x 11¼	Cones, ES	(2)1, (9)5x5	Domes, ES	W,M, T,ST	17-30 ±3	98	50	55,400, 3k	4/3	Four Pieces	Opt.	Black Foam	1650 Sys.	65,000. Sys.
	WATT	Ported	6½			1	Dome	No	50-18 ±3	90	30	1.8k	8/5	12 x 14 x 17	Opt.	Black Foam	120 Pair	4400.00 Pair

LOUDSPEAKERS

MANUFACTURER	Model	Design Principle, Enclosure or System Type	Woofer Diameter, Inches	Midrange Diameter, Inches	Midrange Type	Tweeter Diameter, Inches	Tweeter Type	Separate Level Controls? Woofer=W, Midrange=M, Tweeter=T, Supertweeter=ST	Anechoic Frequency Response, Hz to kHz, ±dB	SPL, 1 Watt/1 Meter, dB	Recommended Min. Amp. Pwr., Watts	Crossover Frequencies, Hz	Impedance, Ohms: Nominal/Minimum	Dimensions, Inches (To Nearest Inch)	Finish	Grille Color and Material	Weight, Lbs.	Price, $
WOLCOTT AUDIO	Omnisphere MDF	Ported	(4)6.5			1.1	Dome	T	30-18 ±3	90	20	2k	6/5	21 x 21 x 50	Oiled Wal.	Brown Knit	90	3495.00 Pair
	Omnisphere MDH	Ported	(4)6.5			1.1	Dome	T	30-18 ±3	90	20	2k	6/5	21 x 21 x 50	Gray Nxtl.	Black Knit	90	2695.00 Pair
XSTATIC SYSTEMS	EC-1	ES	34x74					No	38-21 ±3	87	40		6/2	36 x 18 x 90	Rswd.	Opt.		8200.00 Pair
	EC-3	ES	22x72					No	43-21 ±3	85	25		6/2	25 x 18 x 76	Oiled Wal.	Opt.		5200.00 Pair
YAMAHA	NS-1000X	Inf. Baf.	12	3½	Dome	1¼	Dome	M,T	39-20 ±2	90	30	500,6k	6/5	16 x 27 x 13	Black	Black	92½	999.00
	NS-1000M	Inf. Baf.	12	3½	Dome	1¼	Dome	M,T	40-20 ±2	90	20	500,6k	8/	15 x 27 x 13	Black	Black	68¼	699.00
	NS-500M	Inf. Baf.	12	3⅛	Dome	1¼	Dome	M,T	40-20	91	20	700,5k	6/	15 x 27 x 13	Black	Black	51¾	399.00
	NS-200Ma	Inf. Baf.	10	4	Dome	1¼	Dome	M,T	50-20	90	20	800,5k	6/	13 x 23 x 13	Black	Black	36¼	299.00
	NS-20M	Inf. Baf.	9	1⅞	Dome	1⅛	Dome		55-40	91	20	2k,10k	6/	11 x 16 x 10	Black	Black	21	199.00
	NS-100X	Inf. Baf.	9	2⅜	Dome	1¼	Dome		45-20	91		2k,10k	6/	13 x 21 x 11	Black	Black	30¾	249.00
	NS-10M	Inf. Baf.	7			⅜	Dome		60-20	90		2k	8/	15 x 9 x 8	Black	Black	13¼	169.00
	NS-75T	Inf. Baf.	12	2⅜	Dome	⅜	Dome	M,T	40-20	90		600,5k	6/	15 x 27 x 13	Brown	Brown	47¼	385.00
	NS-55T	Inf. Baf.	10	2⅜	Dome	⅜	Dome		40-20	89		600,5k	6/	14 x 25 x 12	Brown	Brown	40¾	285.00
	NS-35T	Inf. Baf.	10			⅜	Dome		40-20	90		1.5k	6/	13 x 22 x 12	Brown	Brown	29¾	195.00
	NS-25T	Inf. Baf.	8			⅜	Dome		50-20	89		1.5k	6/	11 x 20 x 10	Brown	Brown	21⅛	135.00
	NS-W2	Subwoof.	10					W	40-100			100		18 x 14 x 13	Black	Black	26¼	249.00
YANKEE AUDIO	RE-63	Dipole Ribbon/ ES	15x52			8x52	ES	T	31-22 ±2	88	100	500	4/2	29 x 63 x 3	Opt., Wood	Opt.	200 Pair	2695.00 Pair
	RE-71	Dipole Ribbon/ ES	17x60			8x60	ES	T	29-22 ±2	88	100	500	4/2	31 x 71 x 3	Opt., Wood	Opt.	240 Pair	2995.00 Pair
	RE-75	Dipole Ribbon/ ES	24x64			8x64	ES	T	27-22 ±2	88	100	500	4/2	40 x 75 x 3	Opt., Wood	Opt.	290 Pair	4795.00 Pair
YGGDRASIL DESIGNS	Asgard	Inf. Baf.	15	(4)5	Cones	(4)1	Domes		20-23	90	25	350,3k	8/	26 x 18 x 55	Opt.	Opt.	100	2300.00 Pair



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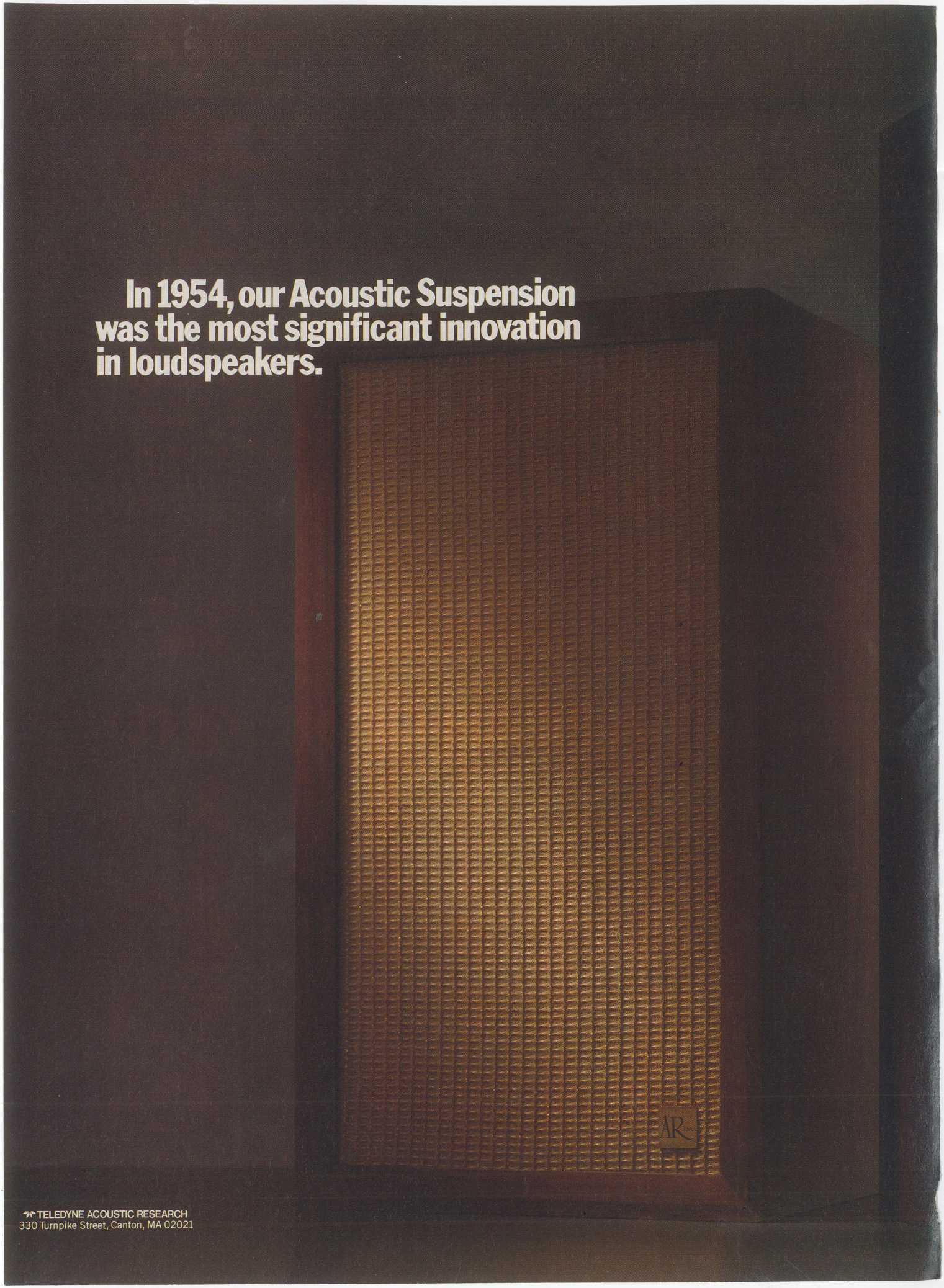

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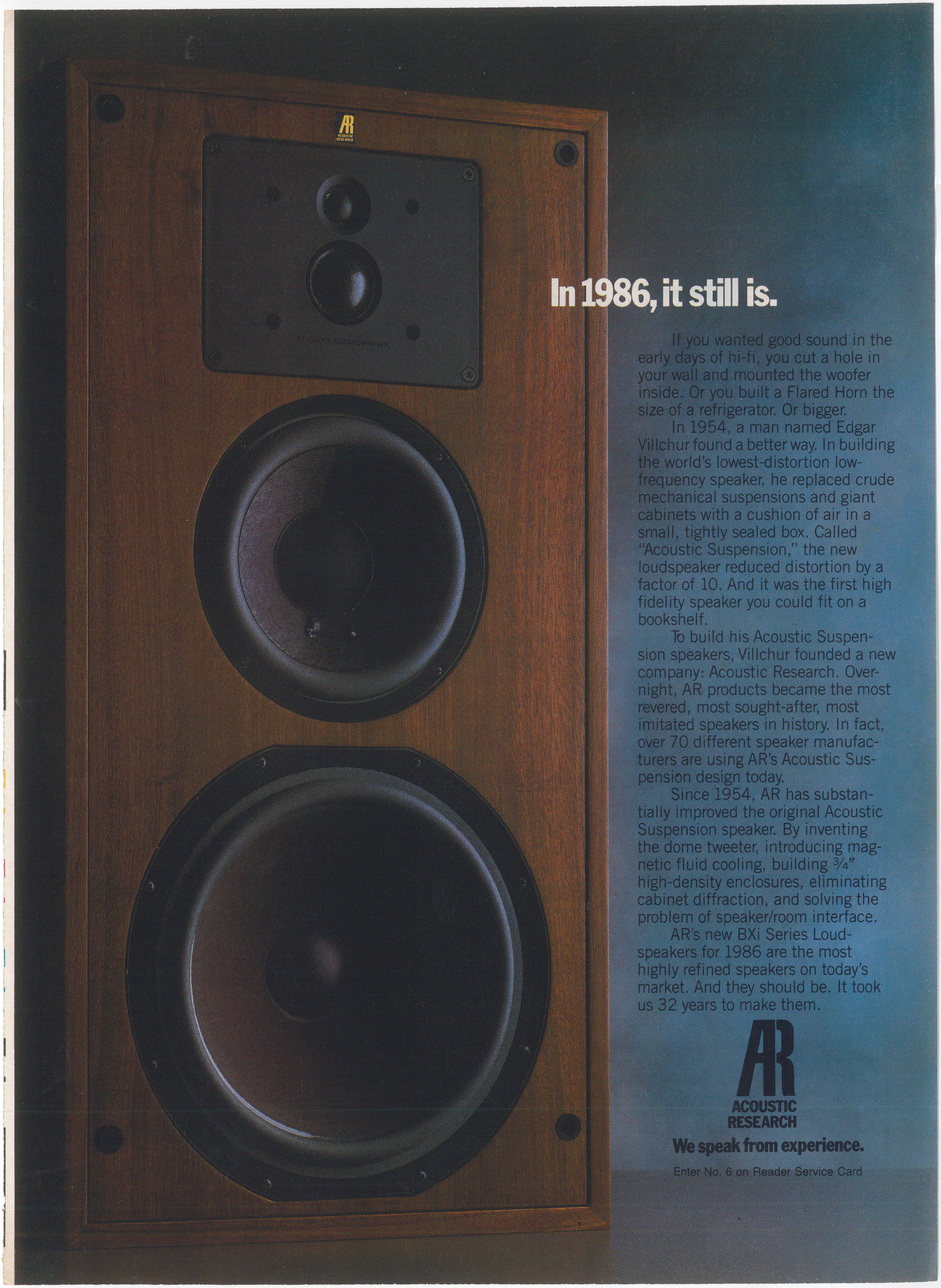

In 1986, it still is.

If you wanted good sound in the early days of hi-fi, you cut a hole in your wall and mounted the woofer inside. Or you built a Flared Horn the size of a refrigerator. Or bigger.

In 1954, a man named Edgar Villchur found a better way. In building the world's lowest-distortion low-frequency speaker, he replaced crude mechanical suspensions and giant cabinets with a cushion of air in a small, tightly sealed box. Called "Acoustic Suspension," the new loudspeaker reduced distortion by a factor of 10. And it was the first high fidelity speaker you could fit on a bookshelf.

To build his Acoustic Suspension speakers, Villchur founded a new company: Acoustic Research. Overnight, AR products became the most revered, most sought-after, most imitated speakers in history. In fact, over 70 different speaker manufacturers are using AR's Acoustic Suspension design today.

Since 1954, AR has substantially improved the original Acoustic Suspension speaker. By inventing the dome tweeter, introducing magnetic fluid cooling, building ¾" high-density enclosures, eliminating cabinet diffraction, and solving the problem of speaker/room interface.

AR's new BXi Series Loudspeakers for 1986 are the most highly refined speakers on today's market. And they should be. It took us 32 years to make them.

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ACOUSTIC RESEARCH

We speak from experience.

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RECORDINGS OF IMPORT

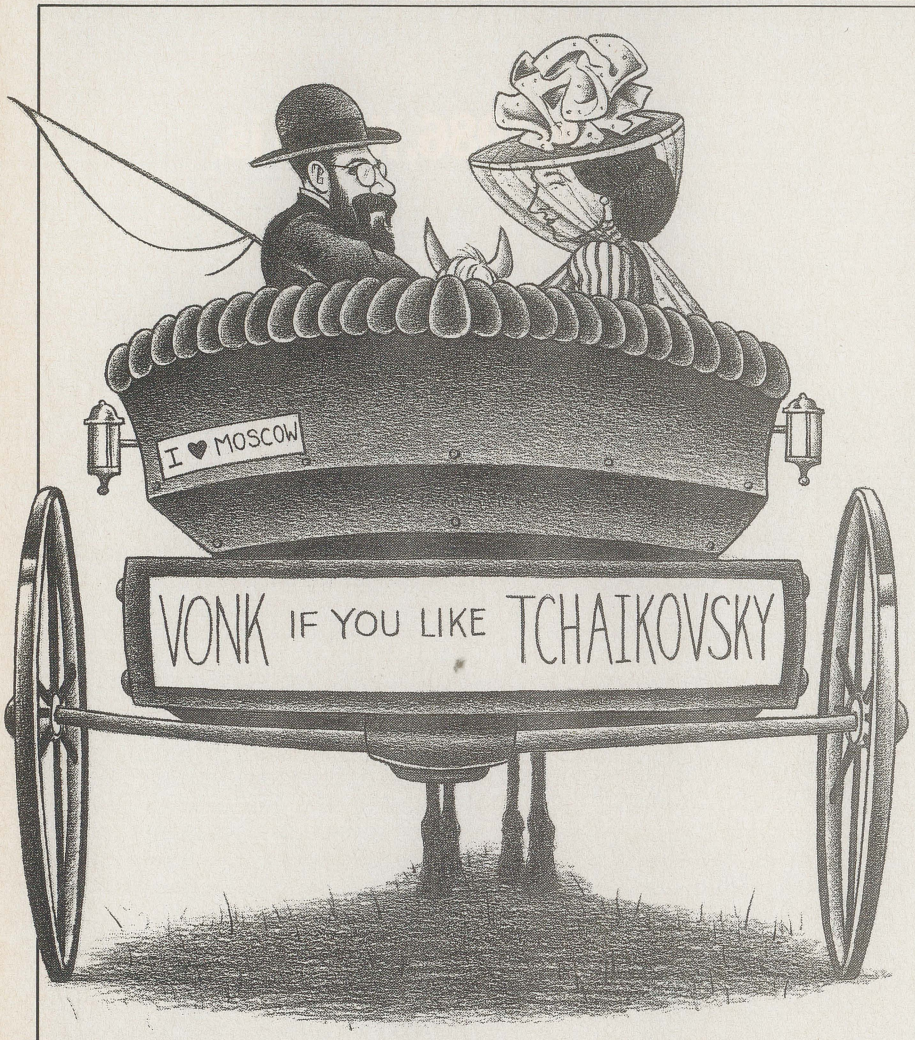


Illustration: Rick Tulka

Tchaikovsky: The Nutcracker. The Dresden Staatskapelle, Hans Vonk.
Capriccio 10071/72, two-disc set.

Carl Maria von Weber: Ouvertüren. The Dresden Staatskapelle, Gustav Kuhn.
Capriccio 10052.

Pachelbel: Canon. New Bach Collegium Musicum of Leipzig, Max Pommer; Ludwig Güttler, trumpet.
Capriccio 10046.

Over the years, recordings from the superb Dresden and Leipzig orchestras have appeared in U.S. record catalogs. In recent years, however, these ensembles have taken a back seat as classical labels bank more heavily on orchestras and conductors with wide international appeal.

During the eary '80s a few Denon audiophile import LPs showed just how good things were, musically and technically, in East Berlin, but it has remained for the CD to bring us a wealth of newly recorded material using the most up-to-date digital techniques. The continuing shortage of CDs has spurred the importing of product from everywhere, just to keep the bins full, and many small European labels are cropping up. One of these companies is Delta Music GmbH, of Königsdorf, West Germany, whose Capriccio label is engaged in a number of joint ventures with VEB Deutsche Schallplatten, the state-run East German recording company.

Three Capriccio releases have recently arrived, and they are well worth raving about. The most ambitious of these is Tchaikovsky's *The Nutcracker* ballet, complete on two CDs. Minimal miking emphasizes precise spatial localization of every section of the ensemble. At the same time, there is enough air and sheen about the sound to satisfy anyone. If we can speak of both the structure and the texture of sound, then this recording has them both in equal measure. The venue was St. Luke's church in Dresden; the acoustics are well managed and never get in the way of the music.

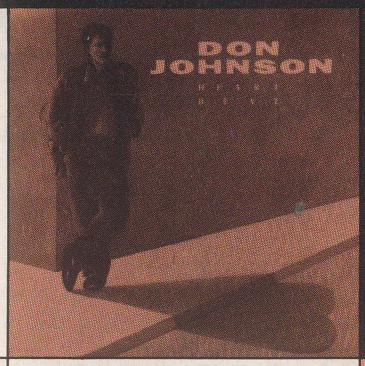
The playing is sensitive and straightforward, and the niceties of Tchaikovsky's orchestration are reproduced with a naturalness that seems to be all too rare in this age of overproduction. Producer Bernd Runge and engineer Eberhard Hinz both deserve special credit for their fine work, as does Hans Vonk, a conductor previously unknown to me. This is a recording not to be missed!

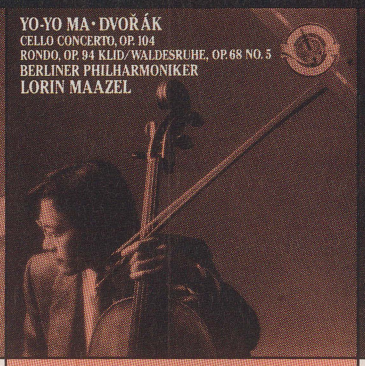
Another Dresden Staatskapelle recording, this time conducted by Gustav Kuhn, is a collection of overtures by Carl Maria von Weber. While it is easy to dismiss these works for what they may lack in emotional dimension, we must take note of von Weber's importance in the evolution of German opera and his conception of the overture as a summary of operatic action. Included here are the well-known "Euryanthe," "Abu Hassan," "Oberon" and "Der Freischütz" overtures. Lesser known are those of the operas "Preziosa," "Beherrscher der Geister" and "Jubel." As before, the recording venue was St. Luke's church and Eberhard Hinz was the engineer. The sonics are equal to those of the Tchaikovsky.

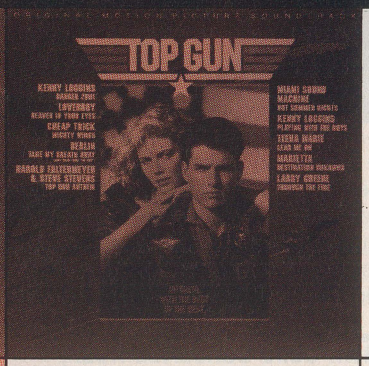
Despite its name, the third Capriccio CD is actually a Baroque sampler, containing 17 assorted movements from concertos and cantatas of various composers (including the ubiquitous Pachelbel "Canon"). The performing group is the New Bach Collegium Musicum of Leipzig conducted by Max Pommer. If there is a featured performer here, it is the trumpeter Ludwig Güttler, whose facility with the various Baroque trumpets is the equal of any soloist active in the West. The group is made up of members of the Leipzig Gewandhaus Orchestra, and the playing is first rate.

THIS MONTH'S BIG EVENTS ON CBS COMPACT DISCS.

OCTOBER







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MAHLER
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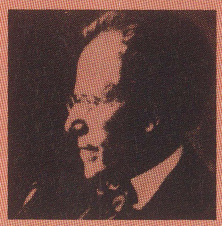

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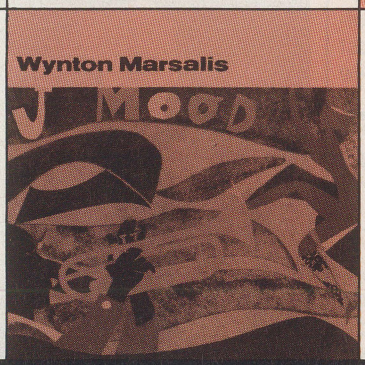

20 **JUST RELEASED!**

TOTO **"Fahrenheit"**
WEATHER REPORT **"This Is This"**
EDDY GRANT **"Born Tuff"**
DAVID BROMBERG **"Best Of/Out Of The Blues"**
RETURN TO FOREVER **"Best Of"**
FREE FLIGHT **"Illumination"**
GEORGE JONES **"Still The Same Ole Me"**
MESSIAEN: **Turangalila-symphonie;**
LUTOSLAWSKI: **Symphony No. 3; Les Espaces du sommeil**
Philharmonia Orch.; Shirley-Quirk;
Los Angeles Philharmonic/Salonen (2CDs)
"Sakura, Sakura" Rampal, flute; Laskine,harp

22

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Heinrich Schiff's cello is recorded with a slight prominence which displays his instrument's ravishing tonal qualities.

All of the Capriccio CDs come with notes in three languages, but the type is quite small and you may have trouble reading it. These superb recordings are distributed in the U.S. by Delos International. *John M. Eargle*

Shostakovich: Cello Concertos Nos. 1 & 2. The Bavarian Radio Symphony Orchestra, Maxim Shostakovich; Heinrich Schiff, cello.
Philips 412 526-2.

Virtuoso cellist Yo-Yo Ma gave us a superb performance of the Shostakovich First Cello Concerto on a CBS CD, MK 37840. It was coupled with the Kabalevsky Cello Concerto, a tuneful and ingratiating work which becomes more impressive after a few hearings. This new Philips CD logically couples the Shostakovich First Cello Concerto with the Second. The Second Concerto has not yet become a staple of the cello repertoire; in fact, this is the only recording of it currently available in any medium.

Heinrich Schiff's performance of the First Concerto is as virtuosic as Ma's, but he takes a different approach to the work. With his somewhat lighter tone and the benefit of a lovely, very open and transparent sound, there is more delineation of the music's rich sonorities. Schiff achieves a wonderful rapport with conductor Maxim Shostakovich, son of the composer. Maxim's reading is very vigorous and emphasizes the rhythmic and dance-like elements of the score. Shiff's cello is recorded with a slight prominence which displays the ravishing tonal qualities of his instrument. Inner balances are well handled, and there are some glorious horn passages which soar with thrilling effect in the spacious ambience of Munich's Herkulessaal.

The Second Cello Concerto has unique scoring that often gives it a mysterious, otherworldly quality, alternating tender lyricism with a sort of wistful melancholy. The finale is very dark and brooding and ends on a sustained diminuendo tone, accompanied by a variety of sharply percussive effects played at fairly low level at a more distant perspective.

Wonderfully evocative performances, splendid playing from the Bavarian Radio Symphony, and compellingly natural sound add up to a most desirable CD. *Bert Whyte*

Telemann: Horn Concertos. The Academy of St. Martin-in-the-Fields, Iona Brown; Hermann Baumann, horn.
Philips 412 226-2.

A new digital recording, made in London in February 1984, this absolutely delightful CD is outstanding for its clarity and its superb balance among strings, horns and harpsichord in a warmly resonant ambience.

Hermann Baumann, on principal horn, is a virtuoso player. In fact, he performs these ingratiating concertos in the manner of the original scoring, which is without "stopping"—putting a hand inside the bell of the instrument. The resultant sound is very well projected, with a big, brassy, gutteral quality. In the "Concerto in D Major" which begins this recording, the two other horns are equally well reproduced. Conductor Iona Brown elicits some splendid playing from the always eloquent Academy of St. Martin-in-the-Fields orchestra.

Four horn concertos and a horn suite may be a bit too much for nonstop listening. Sampled individually, they can be most tasty musical hors d'oeuvres! *Bert Whyte*

Primitive Love: Miami Sound Machine
Epic EK 40131.

The Miami Sound Machine blew in from southern climes and burned a hot little hole in the radio airwaves with its first major-label single, "Conga." The exciting Latin percussion blew away the cooler sounds of British and Brit-influenced American rock and set even staid hearts fluttering and stodgy old feet tapping.

Gloria Estefan's solid, sophisticated vocals blaze out on cuts like "Conga" and "Primitive Love" and waft out gently on delicate ballads like "Words Get in the Way" and "Falling in Love (Uh-Oh)." The hit "Bad Boy" has been encouraging young men all over the country and beyond to think naughty thoughts about lead singer Estefan,

Continued on page 351

Hermann Baumann

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Finally, you can hear your stereo system in stereo.

All Bose® speakers put stereo right where it belongs: Everywhere.

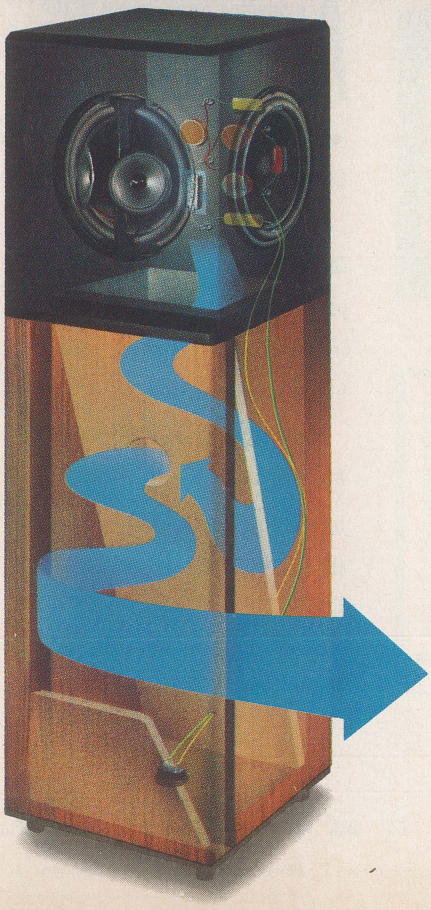
When you listen to conventional speakers, you hear mainly sound from the speaker that's closest to you. So, unless you've arranged your room and your guests precisely around your speakers, chances are that *no one* will hear full stereo—because no one will hear the proper balance of sound that full stereo requires.

Instead of listening to complaints about the seating arrangement, why not listen to speakers that can play your stereo system in stereo? Like all Bose Direct/Reflecting® speakers, the new Point Two speakers are true Stereo Everywhere™ listening systems. Their advanced audio technology shapes and controls sound, producing a lifelike music image that you can hear—and almost feel—throughout your listening room.

The Point Two systems will also let you use your stereo system in a new way: as part of a total audio/video system. Conventional speakers need to be placed either far apart for music or close together for video. Point Two speakers, however, are designed to produce a lifelike sound stage with all sources of sound *without* having to be rearranged. They're capable of putting music on a full, wide soundstage while at the same time putting video soundtracks right where they belong: with the picture on your television.

Each separate part of the Point Two speakers—components, cabinet and crossover—is part of a system that gives the speakers exceptional control

Conventional Speakers



over sound. This Stereo Targeting™ system guides and directs sound into your listening system, allowing you to hear full stereo everywhere you sit or stand—even if it's right next to only one of the speakers. To complete the speaker, the Stereo Targeting system is coupled to an advanced, multi-chamber bass reproduction system (see left) for full-frequency realism.

High power handling and high efficiency make the Point Two speakers ideal for any system and all software, especially digital audio and hi-fi video. The fact that there is a complete series of Point Two speakers available—from compact bookshelf to furniture-quality floor-standing systems—makes them an ideal foundation for *any* audio/video system you intend to build or improve. Judge for yourself by auditioning the Bose Point Two systems at selected dealers. For more information write: Bose Corporation, Dept. ABG, 10 Speen St., Framingham, MA 01701.

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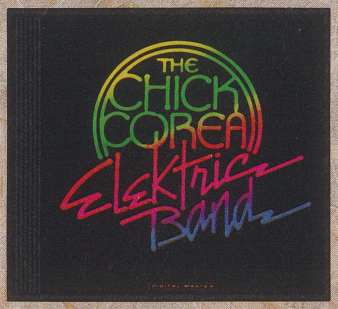
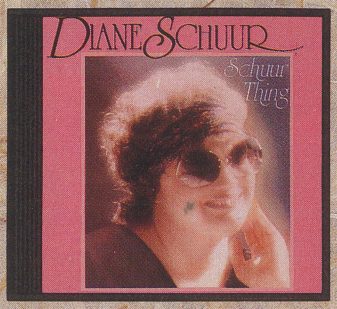


The Chick Corea Elektric Band

Kevin Eubanks/*Face to Face*

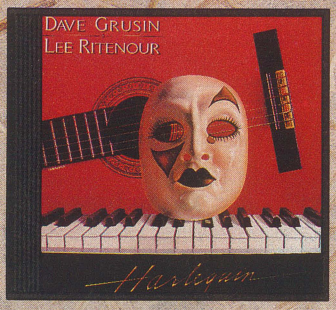
Lee Ritenour/*Earth Run*



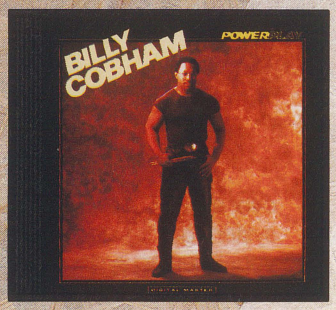
Diane Schuur/*Schuur Thing*

Glenn Miller/*In The Digital Mood*

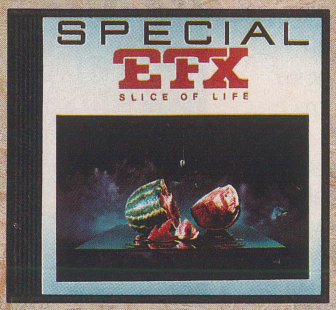
Dave Valentin/*Light Struck*



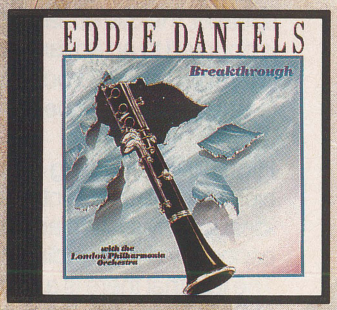
Grusin/Ritenour/*Harlequin*



Billy Cobham/*Power Play*



Special EFX/*Slice Of Life*



Eddie Daniels/*Breakthrough*

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Despite all of its sonic excellence and technical sheen, this recording of *Diva* seems to be much ado about very little.

Continued from page 346

whose good looks only exacerbate the situation.

This Compact Disc version of the analog original sizzles with the passionate music encoded within. The jungle of percussive effects that bring the 10 cuts to pulsing life are captured crisply and cleanly, running the dynamic gamut from timbales to congas to sweet, silvery chimes. There's a lot of fancy electronic effects here, as vocals are accented and punched into the foreground, synthesizers sweep through the background like banks of stringed instruments, percussion and voices are shifted forward and back, left and right. Although the layering becomes very complex and lush in spots, individual instruments rarely get lost. In general, this is a very exciting, excellent production job.

I do have minor quibbles with some production choices here: The trumpet too often is pulled too far into the background and sounds weak and wimpy as a result; ditto for the whistle that opens the title track. I like my Latin trumpets brassy and blaring, and my disco whistles shrill and piercing—but I guess that's just me.

The CD's extended dynamic range is used to superb effect here. The sense of aural space and movement is excellent, and the ever-glorious digital silences are a perfect launching pad for the percussive explosions of the Miami Sound Machine.

Pour yourself a tall, cool, iced Passion Punch, put on your sunglasses, and flip on the old air conditioner before you tangle with *Primitive Love*. It's hot, hot, *hot*. *Paulette Weiss*

Diva, Original Soundtrack Recording. Music composed and conducted by Vladimir Cosma.
Ryko RCD 10010.

Jean-Jaques Beineix's mod, glossy thriller had a significant cult following a few years back; it even had a few defenders among the more notable film analysts. It is, I suspect, those partisans who will be interested in this disc; for all its sonic excellence and technical sheen, it seems to me essentially—rather like the film—much ado about very little. Hollow and affectless, it resembles the demimonde it implicitly criticizes. And Vladimir Cosma's score is apposite. It has something for every musical taste.

The patina of sophistication, perhaps designed to fool the listener/viewer into thinking he has reached the Realms of High Art, is provided by the opening cut: The famous aria for soprano from Catalani's *La Wally*. It is here sung correctly but without much feeling by Wilhelmenia Wiggins Fernandez. After that, the composer plays his "Sentimental Walk," which is virtually a carbon copy of the Erik Satie "Gymnopédies." For the rock-music devotee, there's rock-thriller music; for the Orientalist there are numbers ("The

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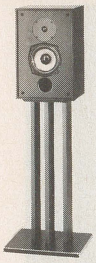

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Hearing the fullness of The Bangles' vocals when they all chime in together is like being rushed by a phalanx of angelic Amazons.

Zen in the Art of Bread and Butter," if you can believe that) with chaste percussion and alto woodwinds; there's also some high-tech chase music for those accustomed to TV's movie of the week ("Metro Police" it's called, and about as original as the title suggests). In a total of 12 numbers there are several rearrangements, and by the time the disc stops you may not be sure what the heck its spirit was.

The digital recording is superb, the separations clean, the orchestrations aptly lush. But unless you were a devotee of the film, I suspect one hearing might be more than sufficient.

Donald Spoto

Different Light: The Bangles
CBS 40039.

The Bangles are better musicians than The Go-Go's were, but as yet they have confined their material to the same arena of preoccupations as that other girl group did, i.e., clothes and high-school style romance.

On *Different Light* lead vocals (as well as writing chores) are split among the four band members. Their voices work very well together in a sugary, pouty style of singing that the heightened clarity of the CD brings into sharp, sweet relief. When they all chime in at once, hearing the fullness of the sound is like being rushed by a phalanx of angelic Amazons.

Against The Bangles' own serviceable accompaniment, producer David Kahne occasionally adds a breathtaking string or keyboard arrangement that makes the most out of the basic pop stock. The effect—filigree against burlap—presents new possibilities in both the fashion and recording worlds.

Although there's plenty of sustain from various instruments and a generous presence of voices, enough space is left for the CD's extensive dynamic range to shine. On songs without a constant background wash, each note of finger-picked, scratched or muted guitar confidently juts out to add a flattering rhythmic edge to the music. Exceptional care has been taken with the percussion, from top to bottom. On "Walk Like an Egyptian," the tambourine and maracas sparkle like a belly dancer's beads; on other cuts, the envelope of the bass drum consistently brings to mind a quickened heartbeat.

It's sad to say that the album's brightest gems are all covers, including the Prince-penned "Manic Monday" and Jules Shear's poignant "If She Knew What She Wants." The Bangles' exuberance, freshness, and affection for the lighter side of life, however, make them worth attending to, like a trip to 31 Flavors. *Susan Borey*

Vivaldi: The Four Seasons. The Taverner Players, Andrew Parrott; John Holloway, violin.
Denon 38C37-7283.

Although the classical repertoire is expanding very rapidly on CD, in such a new format the music of many composers is not available at all, or has only token representation. Nor are we talking about esoteric, little-known music, but much that certainly is considered to be in the standard repertoire.

Of course, the record companies can hardly be blamed for trotting out all the famous "old warhorses" and assorted other chestnuts for the most basic of reasons—they are sure-fire sellers! Granting this, would you believe that this fine CD recording of Vivaldi's *The Four Seasons* is the 15th version to appear in the fledgling format?

My quibble about this is that 15 versions are a bit much for even the most dedicated devotee of CD and Vivaldi to sort through. Surely a half-dozen recordings by acknowledged masters of this music should be enough? Instead of more redundant versions, the concentration should have focused on the gaps in the classical repertoire.

Be that as it may, this CD joins the Hogwood/L'Oiseau-Lyre and Ozawa/Telarc recordings as one of the most musically and sonically satisfying versions of this ingratiating music. The Taverner Players are a group of exceptionally talented musicians who perform on original instruments or copies of same. Andrew Parrott, their founder and conductor, has had the benefit of studying under such luminaries as Claudio Abbado, Sir Colin Davis and even Leopold Stokowski. In fact, in his finely wrought performance of this work, the very expressive string playing is reminiscent of Maestro Stokowski's renowned string sound.

The engineer who recorded this music is Britisher Tony Faulkner. Tony,

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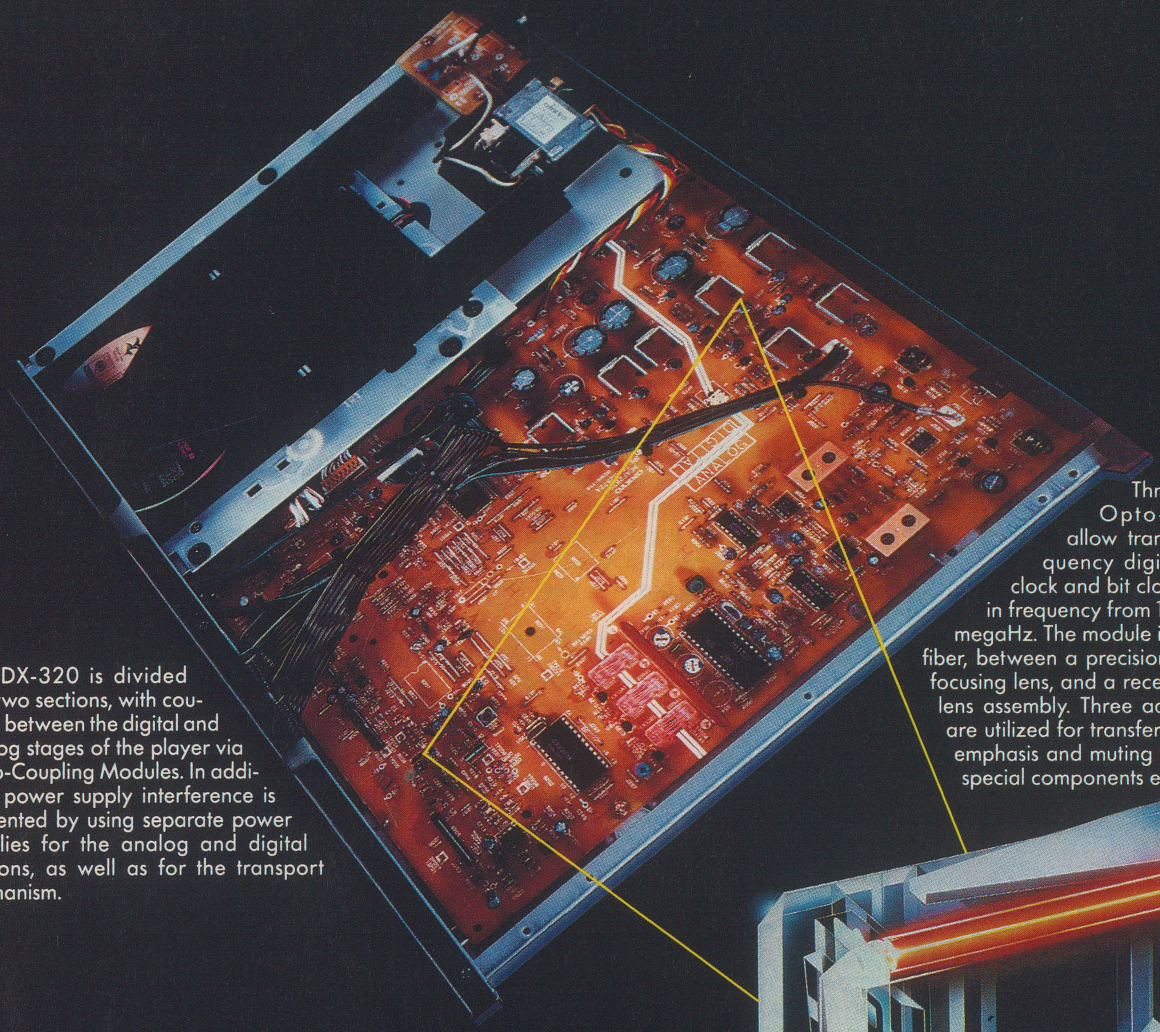

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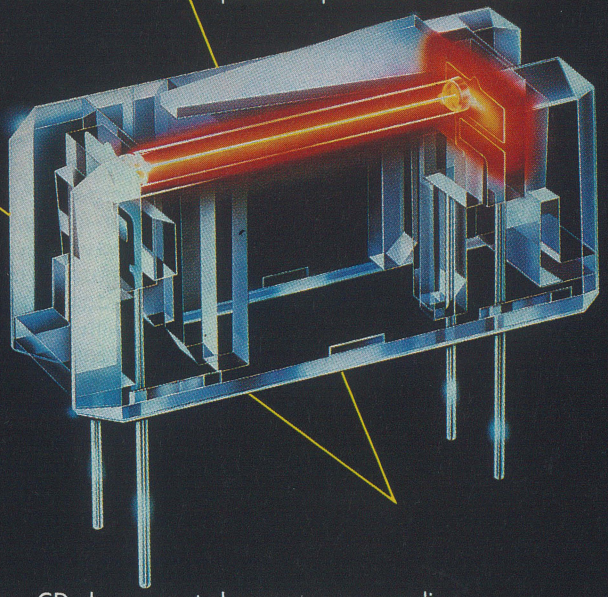

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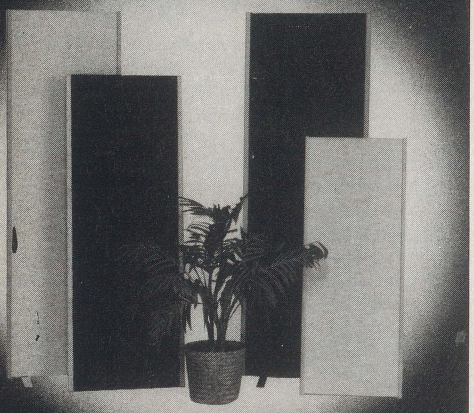

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one of the best classical recording engineers in the business, espouses the use of such "purist" mike techniques as Blumlein (coincident figure-of-eight) or M/S (figure-eight/cardioid "middle-side"), although he has recently been using a pair of the new Brüel & Kjaer omnidirectional condenser mikes. He achieves a lovely, clean sound, with precise localization and a lot of depth, all clothed in the warm ambience of Rosslyn Hill Chapel in London.

Considering the superb performance and the musical realism of the recording, I'd say this Denon CD is the recording of choice for Vivaldi's great "Four Seasons" score. *Bert Whyte*

Tchaikovsky/Mendelssohn: Violin Concertos. L'Orchestre Symphonique de Montreal, Charles Dutoit; Kyung Wha Chung, violin.
London 410 011-2.

Kyung Wha Chung recorded these same two violin concertos for London/Decca early in her career. If I recall, this was in the early '70s, and her interpretations were very well received.

In this splendid new digital recording, her performances clearly reflect growth and maturity as a violin virtuoso of international renown. She has always been secure in the technical mastery of her instrument. Now she adds a new dimension to her artistry with her richly expressive playing and deeper involvement with the music.

Engineer John Dunkerley has developed a recording technique which fully exploits the fabulous acoustics of St. Eustache Church. This is evident from the notable series of recordings he has made with the Montreal orchestra in this locale, and he has provided Kyung Wha Chung with a recording of equal stature. It is a very natural, open sound, yet it never lacks in orchestral definition. The violin is projected just forward of the orchestra and clearly reveals the richness of the artist's tonal resources.

Dutoit's Montrealers get better and better, and his accompaniment for the violinist is nicely balanced, displaying a good rapport between these artists.

How nice to have this kind of wonderful music making on CD, where the high harmonics of the solo violin will remain pristine and audible forever, instead of expiring at the grinding stylus/groove interface of a vinyl disc!

If you are fond of these two great staples of the violin concerto repertoire, you will find this CD particularly rewarding from both musical and sonic viewpoints. *Bert Whyte*

Zoolook: Jean-Michel Jarre
Disques Dreyfus FDM CD-18118.

Sound: A– Performance: B+

Fans of the "space orchestra" that Jean-Michel Jarre created on his hit *Oxygene* will be surprised by *Zoolook*, an album that seethes with primal rhythms and ethnic atmospheres. Using the latest in digital sampling technology, namely the Fairlight CMI and Emulator, Jarre creates a global dance orchestra, and his instruments are vocal sounds from around the world.

Jarre sampled people speaking and singing more than 20 languages, edited them into phonetic fragments, reprocessed them in his synthesizers and placed them at his fingertips on the keyboard. The result is a colorful and dynamic recording that is well served by this CD, which unveils the many layers of Jarre's arrangements.

Instead of album-length epics, *Zoolook* contains discrete tracks exploring a variety of textures and moods. "Ethnicolor" is a slow-motion panorama with droning choirs and voices calling out at the borders of intelligibility. Bassist Marcus Miller locks in and rips into a dark funk, prowling beneath the wail of jabbering, syncopated voices and swelling synthesizers. Jarre's punchy Linn Drum programming and Miller's catchy bass lines approach hip-hop danceability at times, as on "Zoolookologie." Laurie Anderson puts in an appearance on "Diva," imitating a digital keyboard playing her voice. It's the kind of technological contradiction that Anderson thrives on.

Jarre still has a penchant for corny melodies, a pop sensibility that recalls the '60s Moog ditty "Popcorn." But when he's operating on the plateaus of rhythm and sound, he's exhilarating. The CD format heightens the textural interplay that Jarre is best at, weaving together digital sounds, digitally sampled sounds, and analog sounds into a recording that smashes electro-acoustic distinctions. *John Diliberto*

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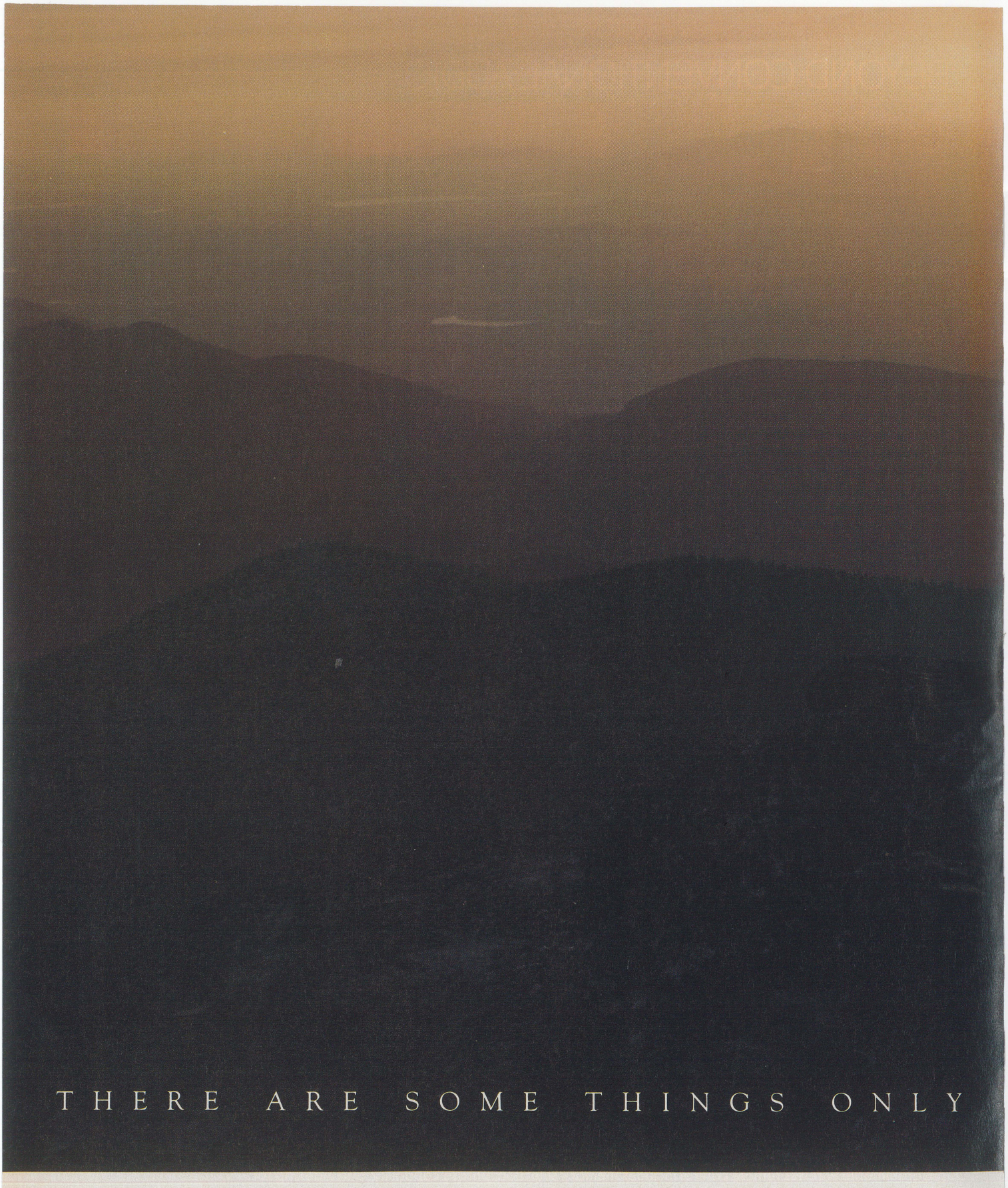

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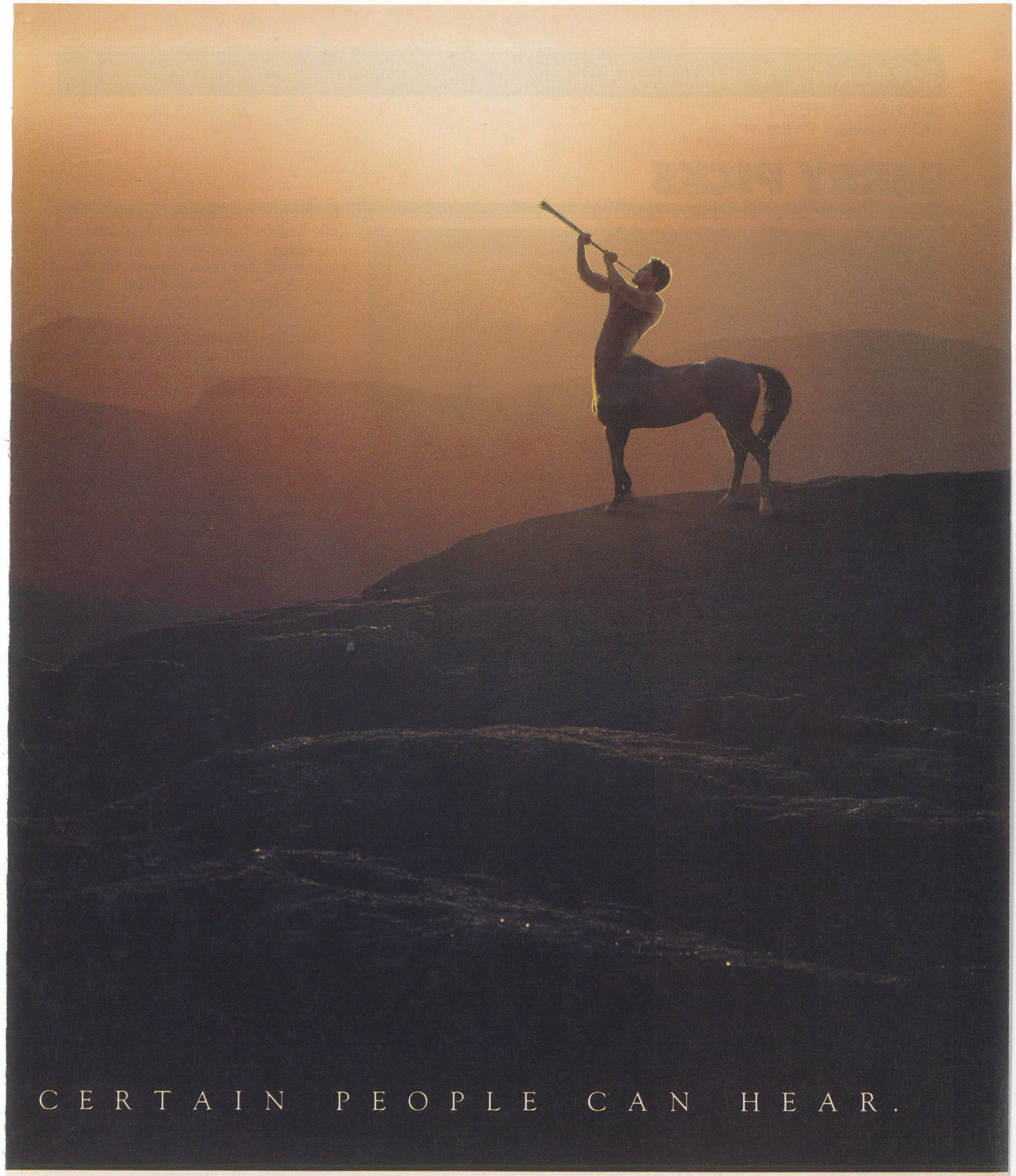

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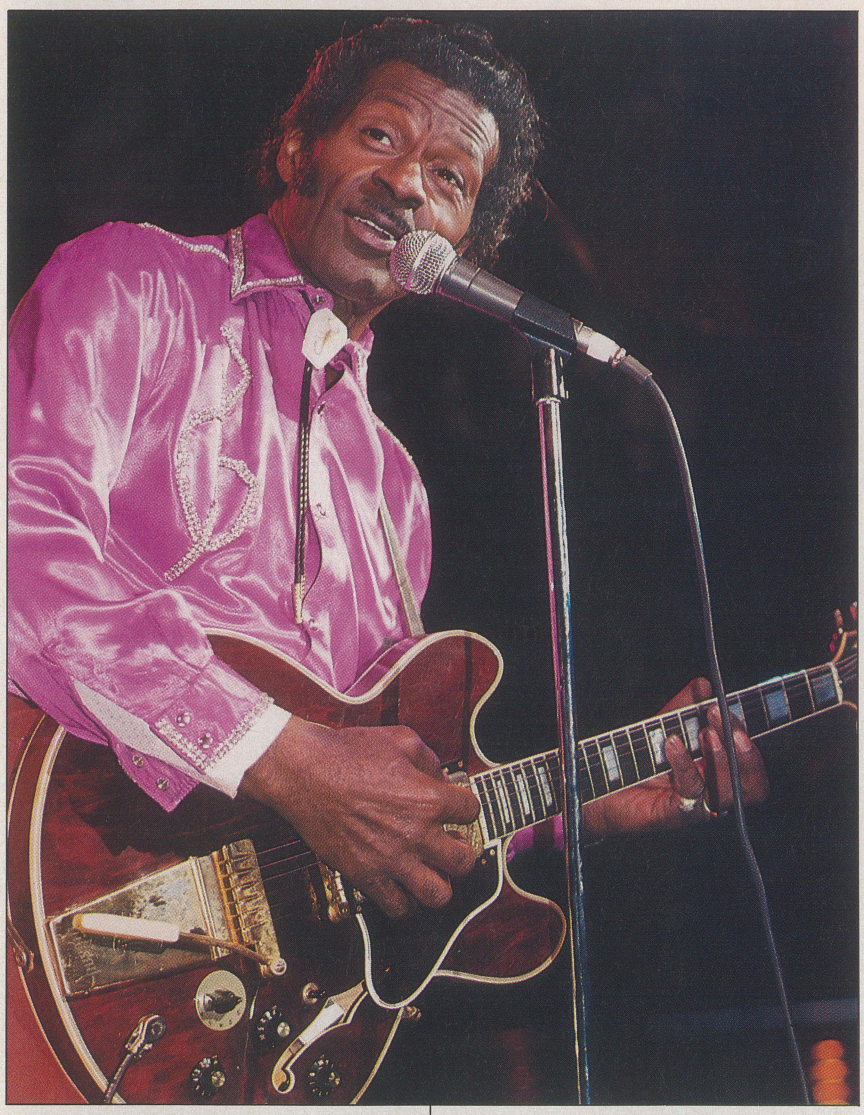


Photo: ©1983, Ebet Roberts

Rock 'n Roll Rarities: Chuck Berry
Chess/MCA CH2-92521, two-record set, $8.98.

Sound: Variable Performance: A

When you know a song well enough to have had it insinuate itself almost into your genetic code, you don't quite listen to it with full attention anymore; your brain can play it back for you by itself. However, if the piece is subtly altered your ears will perk up and you'll hear it anew.

That is the kind of thrill *Rock 'n Roll Rarities* is all about. It contains 20 selections, many of which are classics, but what we hear is a little different from what we expect. Several cuts are presented in stereo mixes from the original two-, three- or four-track masters for the first time; these include "No Particular Place to Go," "You Never Can Tell," "Nadine," "Promised Land," "Bye Bye Johnny," "I Want to Be Your Driver," and the follow-up to "Memphis," "Little Marie." On these, the broader scope of sound is a very pleasant surprise. Other cuts are presented in versions different from those previously released, often with a considerable amount of studio patter included. Among these are such classics as "Rock and Roll Music," "It Wasn't Me," "Rockin' and Reelin' " in its original demo, "Johnny B. Goode," "Little Queenie," "Come On," "Sweet Little Sixteen," and "Beautiful Delilah." One song, "Time Was," is previously unreleased; the hard-to-find "Run Rudolph Run," "Oh Yeah," and "Betty Jean" complete the set.

Throughout, the sound is better than I anticipated. Given the age of these recordings (1957 to 1965), somewhat variable sound quality is to be expected, but it is always acceptable here. Producer/remixer Steve Hoffman's technical performance is excellent. Helpfully, the package includes data on recording dates and sidemen. Still, further notes about the songs would have been appreciated.

Since MCA acquired the vast Chess/Checker/Argo catalog in 1985, they have barely begun to mine its treasures, and there is much more on the way. In fact, an additional volume of Chuck Berry *Rock 'n Roll Rarities* is scheduled for release by the time you read this. At the very least, don't miss volume one if you fancy yourself at all interested in early rock 'n' roll. This stuff is must listening, as essential as any rock reissue is likely to be.

Michael Tearson

Invisible Touch: Genesis
Atlantinc 81641-1-E, $9.98.

Sound: B Performance: B

If you're expecting *Invisible Touch* to sound like Phil Collins disguised as Genesis, you're in for a surprise. This is more like Genesis disguised as Peter Gabriel. In the same way that Gabriel shook off the ornate filigree of the band in order to discover his own rhythmic roots, Genesis has pruned its sound down to a fundamental, uncluttered state. Like Gabriel's solo work, it sounds as if it were composed around a rhythm machine. Streamlining has taken place without diminishing the band's power, however; clean, spare, bold strokes do for Genesis what they did for van Gogh.

Percussion of all kinds predominates, further spotlit by the spaces left by guitars and keyboards. Collins' voice, which is emerging as one of the most popular of the decade, becomes the uncontested focal point of the songs. His excellent R&B edge is sharpened by a sense of vulnerable honesty and a feeling that Phil is working hard to deliver every sweaty note.

The songs, if mostly sad in content, are strongly built, arranged, and performed. Those addressing social issues are forceful without being pretentiously macho; "Land of Confusion" and "The Last Domino" expose a soul-darkening decadence as well as our perverse impulse to revel in the morbid sensationalism of the telly. The love songs actually deal with fractured, destructive relationships mistaken for love, but even the saddest, "In Too Deep," is heart-rending without being melodramatic.

Genesis is not content to merely polish the pop song here—to hit and run, so to speak. Side two features a lengthy panoramic drama that combines the themes of sick love and sick society into a wonderfully wrought, pessimistic pastiche.

Judging by this band's consistency, I bet that if they opened a restaurant they'd achieve instant success and offer delicious fare too. They always seem to be in the right place at the right time—with the right stuff.

Susan Borey

Genesis

Revenge: Eurythmics
RCA AJLI-5847, $8.98.

Sound: B+ Performance: B+

Most rock bands start out gathering an album audience and eventually work up to the point where they write and produce a hit single, but Eurythmics—who insist there is no "The" in their name—have gone the opposite way. Before they were able to develop a following on AOR (album-oriented rock) radio, they had a hit single, and since then Annie Lennox and Dave Stewart have been changing from pop to rock. They may have begun with a synth-pop base, but *Revenge* is the work of a guitar band, and one of the primary solo instruments is harmonica. If you were wondering how this has affected their sound, the answer is "only for the better!"

Of course, Dave Stewart has been boosting his rock credibility by producing Tom Petty and Daryl Hall, and he's starting to look like this year's Dave Edmunds. His abilities as a producer have improved with experience—he gets quite a crack out of Clem Burke's drum kit. Annie Lennox is confident and cool, singing very well, as usual (no duets with Elvis Costello or Aretha this time, though), and devoting less time to the keyboards now that Patrick Seymour has become a regular member of the ensemble. Eurythmics are becoming, generally speaking, more of a group and less of a duo, although Stewart and Lennox are undoubtedly laying down the law.

Eurythmics

The A side of the album is heavily stacked with killers—"Thorn in My Side," "Missionary Man," "The Last Time" and "The Miracle of Love" all rank with the best work this act has recorded. Side B is less obvious in its appeal, and the only track which seems destined for single release here is the excellent "A Little of You." Some of the other songs are a bit disappointing, however—"In This Town" is like "Sisters" meets "Would I Lie to You," with a Howlin' Wolf riff thrown in for good measure. But such quibbles are minute compared to the overall worth of the record.

Who would've guessed that these two would end up every bit as rocking as The Pretenders? As songwriters and stylists, Ms. Lennox and Mr. Stewart have not just grown, they've found new directions which have helped their

By bringing in an outside producer, Steve Winwood freed himself to pay more attention to the music, and to create his most mature work ever.

artistry and their appeal simultaneously. This is one bitchin' record for an ex-pop band, so check it out.

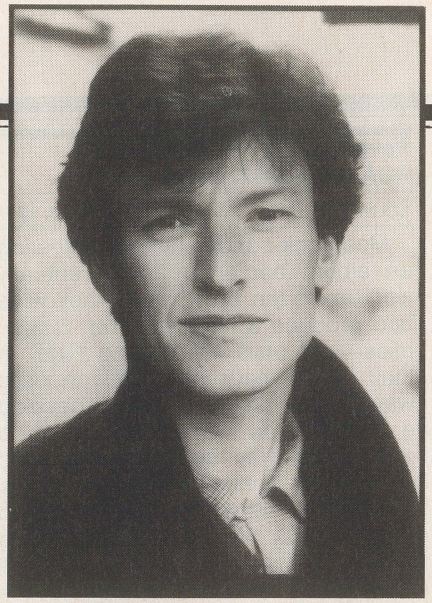
Jon & Sally Tiven

Sleight of Hand: Joan Armatrading **A&M SP 5130,** $8.98.

Sound: B– Performance: B+

Sleight of Hand is Joan Armatrading's twelfth album for A&M. Beyond that, however, it is an album of firsts: It is Armatrading's first self-produced effort, the first to be recorded at her own Bumpkin recording studios, the first on which she does nearly all the guitar playing, and the first on which she has recorded with her touring band (plus, on one cut, drummer Mel Gaynor of Simple Minds).

Lyrically, Armatrading essentially remains constant on *Sleight of Hand*—introspective, and sometimes wearing her heart on her sleeve. Musically, however, this album is arranged in a harder, heavier style, and the vocals carry more open emotion. Drums and bass are played and recorded solidly and are the heart of this record. In addition, the album is a tour de force of musical textures. Synthesizers, guitars and vocals are well arranged to set the stage for Armatrading's voice, which is one of the finest in all pop music.



Nearly all the tracks on *Sleight of Hand* employ clever, *musical* use of special effects to enhance the arrangements, although in some instances the effects overshadow the vocals. This problem may well be attributed to a bit of self-production self-indulgence, as Armatrading tries to prove that she can use digital effects as well as the next producer. Recording engineer Mark Wallis has done an exceptional job of putting instruments on tape, especially considering that all special effects are said to have been recorded directly rather than added during the mix. Steve Lillywhite mixed the album at The Town House Studios in England.

Long-time Armatrading fans may initially be put off by the aggressiveness of *Sleight of Hand*, but a second listen will reassure them that the magic is still there. And if radio program directors finally give her the airplay she has always deserved, new fans will arrive in droves.

Hector G. La Torre

Back in the High Life: Steve Winwood **Island 25448-1,** $8.98.

Sound: B Performance: B+

A whole lot has gone on in Steve Winwood's life since his previous solo album back in 1982. He divorced his wife Nicole and spent a lot of time—even for Winwood—being reclusive. However, with his new album Steve Winwood establishes his strongest public profile since Traffic broke up in 1974. Heck, he's even planning to undertake his first tour since then.

Although Winwood plays multiple parts on every track (all kinds of keyboards, synthesizers, sequencer and drum-machine programming, mandolin and guitar), he's broken from the one-man-band syndrome that characterized his first three solo albums. By engaging the excellent and sympathetic Russ Titleman to be his first outside producer and involving Tom Lord Alge as engineer, Steve freed himself to pay more attention to the music. Titleman also brought in carefully selected sidemen to flesh out the songs into a fuller sound.

The title song might well be the credo of a man who has just emerged from a thick shell and rediscovered the joys the world can hold for him. James Taylor's tightly controlled, rueful harmony is lovely here. Other songs are also optimistic—even the cautionary "Split Decision" (written with Joe Walsh, who adds a stinging slide guitar part) feels upbeat. Only the last song, "My Love's Leavin'," is truly sad.

Rereading what I wrote about 1982's *Talking Back to the Night*, I think I was too kind to an album that now feels incomplete in several of its songs. Titleman has seen to it that such cannot be said of *Back in the High Life*, which is surely Steve Winwood's most fully realized and mature work.

Michael Tearson

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Simply Red

Picture Book: Simply Red
Elektra 60452-1, $8.98.

Sound: B+ Performance: A–

Simply Red is not simply blues. The Manchester, England sextet's debut album is an amalgam—maybe even an anagram—of musical idioms from jazz to Latin to gospel to R&B and funk. As to the latter two, lead vocalist and chief songwriter Mick "Red" Hucknall displays devotion but never slavishness. Credit is also due in equal parts to producer Stewart (The Crusaders, Randy Crawford) Levine and to the interracial band lineup that makes the name Simply Red ironic.

The smooth-as-rayon sound only costars here with Hucknall's alternately luxurious and pained vocals. Hucknall doesn't throw around self-conscious vocal tricks; he swings through hairpin curves at just the right angles and, when a song requires it, knows how to seal the envelope tight. Like most first albums, *Picture Book* isn't picture perfect—at its worst, it's warmed-over Michael Franks. But the conviction present in such songs as the cover of the Valentine Brothers' Reaganomics lament, "Money's Too Tight (to Mention)," or the contemplative and regretful "Holding Back the Years," is rare and welcome.

The band's musicianship is appropriately imagistic for such material. "Sad Old Red" begins with a creeping be-bop bass line that cooks to a swinging finale. "Heaven" is piano-dominated melancholia, with blues lines floating behind Hucknall as he sings, "Everybody's trying to get to the bar/the name of the bar/the bar is called Heaven." On the title cut, ghostly melodies mingle with the wails of the walking dead; Edvard Munch could have painted it. *Picture Book* is one appropriate title. *Frank Lovece*

Solo: Mimi Fariña
Philo PH-1102, $9.49.

Sound: B– Performance: B–

Mimi Fariña's first solo album is a warm and friendly one. Mimi, younger sister of Joan Baez and widow of Richard Fariña, is not all that spectacular as a singer, but she knows how to do good work within her limitations. Very empathetic instrumental support is a critical ingredient here. The most valuable players are bassist Mark Egan, late of Pat Metheny's group, producer/engineer/guitarist John Nagy, and the former Youngblood member who goes by the name Banana, who has worked with Mimi for 11 years and plays a variety of instruments here. Nagy's production and sound design provide the warmth which the album's artistic intent requires.

Six of the 10 songs are Mimi's own compositions. Best of the others are Tim Hardin's terribly sad "How Can We Hang On to a Dream" and Richard Fariña's "Quiet Joys of Brotherhood," which Mimi first recorded on *Memories,* the final Richard and Mimi album. This last, particularly, showcases Egan's bass and Mimi's vocal. *Solo* is best on the more melancholy songs. However, it's not depressing; the melancholy works as a catharsis, ultimately making the album an uplifting experience that celebrates the human spirit. *Michael Tearson*

No Free Lunch: Green on Red
Mercury 826 346-1 M-1, $6.98.

Sound: B– Performance: C–

Green on Red tries valiantly on this EP to inject new life into rock/country fusion, and they very nearly pull it off. Instrumentally, they are right on the money; it is the vocals that let them way down.

With Steve Street and veteran engineer Simon Humphries on the board, *No Free Lunch* has a richly textured instrumental sound driven powerfully by the band's drummer, Alex MacNicol, who keeps wanting to play faster and harder and can barely restrain himself.

But then there's vocalist Dan Stuart, who is also listed as producer. His voice is so raggedy and rough that he almost makes Bob Dylan sound like Pavarotti. By himself he makes listening to Green on Red difficult despite the group's instrumental excellence. *Michael Tearson*

Green on Red

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EDWARD TATNALL CANBY

DYNAMIC DUO

Mozart: Sonata in D for Two Pianos; Schubert: Fantasia in F Minor for Piano Duet. Murray Perahia and Radu Lupu, pianos.
CBS IM 39611, digital.

By now, 205 years after it was written, Mozart's brilliant sonata for two of the keyboard instruments of his time really sounds out of place on a pair of large, spare, steely modern grands. Extra volume and power add nothing, at least on record; the scoring that presupposed a much brighter and more wiry sound is thin and too sparse. Our renewed "fortepianos" are basically right but not yet carried to the superb levels of craftsmanship and sound that the modern harpsichord builders show us. So what to do?

Don't worry about it. If two artists of the calibre of Perahia and Lupu can be heard, it is going to do the music credit on any instrument.

The pianos, to be sure, are recorded in what seems to me a long Columbia tradition—rather close, dry, and hard. Not too helpful, if impeccable in the fi (aside from some minor pre-echos, a usual analog fault and extremely hard to avoid in such powerful piano tones). Still, nothing could spoil my enjoyment of these two strong but always careful artists.

The Schubert, on a single piano, is one of those strange and powerful works out of the composer's very last year. It too gets a compelling and well thought-out performance, if somewhat upsetting in terms of the usual conventions of Schubert interpretation today. Not wrong—who can say? We didn't record Schubert himself back in 1828. But here the sounds are not always the expected ones, if you know the piece. I do feel a lack of that wonderful filigree effect in the composer's high-up melodies, and there isn't the right drama in the startling changes of key, which can knock you off your seat if the right player does them the right way. Yet why compare? A new and different interpretation is a lot better than a pedestrian reading of the notes. This is top-level music making, different or no.

Interesting, by the way, to find that the single piano on side two sounds just as big and loud as the two instruments on side one. That's part of the aesthetic impact of recorded music—again, not good or bad but *different*. Indeed, the Schubert sounds bigger, because his scoring is more favorable to the modern instrument.

Perhaps a more audible stereo separation in the Mozart might have helped to compensate for the sight as well as the sound of a live performance? That sight is very unlike the

visible impact of two players crammed together sidewise at a single keyboard! The one-piano duet has always been popular for informal playing, but to this day we seldom hear it on the concert stage. It sounds good. It looks awful. Two-piano music on stage, in case you have not seen it, is done with the pianos facing oppositely, curved sides fitting together and the keyboards and performers at the far extremes right and left, visually heightening the sense of separation.

Mahler: Symphony No. 9; Symphony No. 10, Adagio. The Vienna Philharmonic, Loren Maazel.
CBS 12M 39721, digital, two-record set.

Not too long ago I found the Mahler Fourth in this series full of inexplicable faults, including an audible lack of rapport, or so it seemed, between musicians and conductor. In this recording I stopped short at the end of the single long Adagio from the unfinished Tenth—superb! So good, indeed, that I was loath to try the Ninth until I had absorbed the glory of this one LP side. A very great recording.

The Tenth symphony was sketched out by Mahler to its full enormous length, and Deryck Cooke spent long recent years in fleshing out the sketch into a performing version. Even so, the completed opening Adagio seems to stand in some infinite cosmos of its own—I believe that it is one of the great single expressions of Western musical thought.

I have not been an admirer of Maazel—but all that is now changed. One tries to keep an open mind. As for the orchestra, the Viennese musicians rise to their absolute finest. The music is the very end-extreme of Romantic harmony, with sound combinations built on the overtone series, however distantly, and therefore deriving from the bottom upwards. The violins ride in a sort of musical stratosphere, high upon the pinnacle of some of the most extraordinary chords ever imagined, achingly difficult to play, to tune and to understand. There is one razor-sharp dissonance after another, almost microtonal and beyond the tempered scale, with every tone to be heard as part of a *harmony*, on the extreme edge of comprehension. This sort of music is tremendously demanding for the violins, who must play these sounds in agreement with each other. If they misfire, there can be no sense in the listening. They don't.

I assume that this digital recording was made with the multi-mike tech-

Illustration: Rick Tulka

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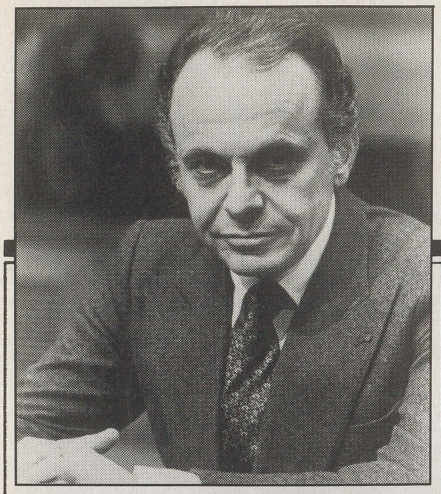

I haven't been an admirer of Lorin Maazel, but all that is now changed with this very great Mahler recording. One tries to keep an open mind.

nique still in use at CBS; the sound is even and well balanced. Still, those extremely tenuous, ultra-high notes, and the long, slow sweep of the musical sense—often pianissimo, extremely soft—ask for the CD format (CBS M2K 39721). There is loud music too, notably the famous passage where the entire orchestra, huge, plays a chord that includes every note in the chromatic scale simultaneously. Dynamic range with a vengeance! I consider the CD a must, satisfactory though the LP is.

Dvořák: "American" Quartet, Op. 96; Shostakovich: Quartet No. 1 (1938); Turina: La Oracion del Torero. The Fine Arts Quartet.
Gasparo GS 223, $9.98.

There are some 14 current LP versions of the famous late work of Dvořák, composed, like most of the "New World" symphony, in this country. It is, of course, purely Czech (i.e. Bohemian) music, and any resemblance to American tunes is unimportant. The man was honest enough to be himself and write his own.

I very much recommend this recording, even though several others are now on CD (Denon has it with the Smetana Quartet). The Fine Arts Quartet is one of those curious groups that, though absolutely first-line since their formation in 1946, somehow never got the big headlines, the super publicity. It often happens. Too easygoing? Not their music, but perhaps their collective personality. This quartet has played everywhere and is one of the busiest and most in demand, publicity or no. I rated the original members as tops; I could immediately hear in this recording that the new members, who have taken over one by one, have kept the tradition going. They are excellent, their style and presentation is perfection. They *impress* you, not as a quartet, not as virtuosi, but simply with the impact of the music and their understanding of it. They are far ahead of the Smetana Quartet out of the Czech homeland, as I hear it.

My praise applies not only to the wonderful atmosphere immediately evident in the Dvořák, but equally to the mid-period Shostakovich work, beautifully presented for a superb effect, and the extra filler, a serious Spanish-style piece by Turina. Each is given its own "costume," so to speak, its special style, and each is different.

Perhaps older readers will have had a twinge of memory—the Fine Arts once took on a major role in audio history. This was the group that did the first and most famous "Live vs. Re-

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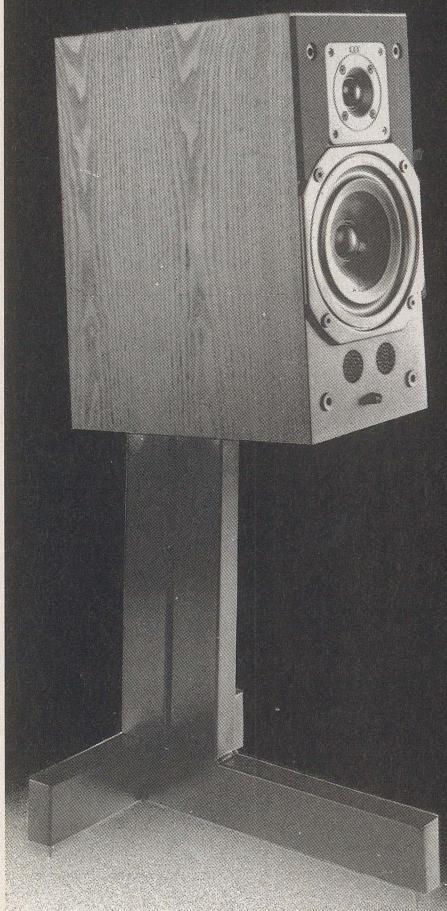

Pictured is the Meridian M30 biamplified active loudspeaker.
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The young members of the American String Quartet show that they really understand the spirit of Bohemian Romantic music as Dvořák expressed it.

corded" comparisons for Edgar Villchur and his AR speakers, put on at various audio shows. I was at some of the recording sessions and they were horrendous—what other group would have been so unfailingly understanding? The music was recorded outdoors in the middle of a wide meadow—an anechoic chamber deluxe. Incredible problems arose, from the white noise of wind in tree leaves to loud crickets. In playback, the rehearsals involved perfect cuts between the live players and the recorded sound, back and forth—and the quartet even went along with the best trick of all, *pretending* to play their instruments while the sound was actually coming from the loudspeakers. It worked. It sure sold AR too. If I do say so, even I was fooled, though I knew where the shiftovers would occur. A beautifully contrived demo, thanks to the Fine Arts.

Dvořák: String Quartets in D Minor (Op. 34) and E Flat (Op. 51). The American String Quartet.
Nonesuch 79126, digital, $10.98.

We've heard a number of Czech recordings of Dvořák, recently imported both from that country's Slovak segment and from its dominant musical center, Prague. Czechoslovakia is, of course, Dvořák territory, the old "Bohemia," part of the ex-Austrian Empire and for long a musical center rivalling Vienna itself. (Mozart made his greatest successes there, not in blasé Vienna.) Here, in contrast, are young American musicians, a quartet of them, playing the old-world music. It makes for an interesting comparison.

These people, without the slightest question, really understand the spirit of Bohemian Romantic music as Dvořák expressed it—that wonderfully smoky, atmospheric elegance laced with converted popular Czech dance tunes, the last pure expression of the Romantic spirit not yet troubled by incipient decay. These quartets come some 20 years before Dvořák's visit to America, but they are youthfully mature works of the sort that made the composer famous in Europe.

The American String Quartet's only impediment, if I can call it that, is an excess of vibrato, particularly in the lead instrument, the first violin. It makes for difficult listening, somewhat obscuring both the harmonies and the melodic lines. I doubt if Dvořák's own audiences heard the music this way.

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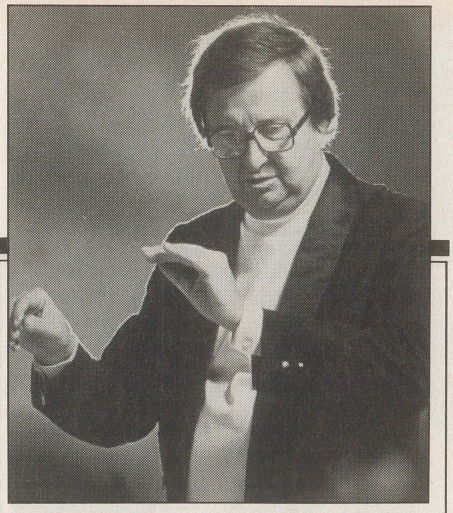
The sound is brilliant, but Jean-François Paillard's ensemble produces only a poor approximation of the lively rhythms inherent in Delalande's music.



Vibrato seems to be a feature of our age, a pseudo-Romantic trait that did not exist in the real Romantic period a century back. But to compensate, the Americans play an uncannily beautiful pianissimo, ultra-soft. A vital element in Dvořák. I'd put these players well ahead of the old-country performers.

Delalande: Simphonies pour les Soupers du Roy, Concert de Trompettes, Trois Caprices. The Jean-François Paillard Chamber Orchestra. **Erato 75174,** digital, $10.98.

The mysterious French! Mysterious to us, at least, and never more so than in the age of the Sun King, the last years of the 17th century and on. The color photo on the cover of this one is worth the price of the LP: Louis XIV unveiling a wonderfully tortured statue in the gardens at Versailles, a Greekish nude, his backside being eaten by a lion. Crowds of dandies surround the King and Queen, posed in their incredible finery, with the royal Person lit up as though by . . . well, the sun, more likely a floodlight. He is dressed in gorgeous red and a wide red hat, white stockings, and high-heeled, bowed white shoes. And of course he carries an elegant cane. Great buildings and green, sculptured terraces stand behind him with the royal coach nearby. *Walk?* Heaven forbid. It could be an Ektachrome slide taken at the spot.

What a digression—but necessary! The music is of the sort that accompanied almost every act of the king, from dawn virtually to dawn. It is florid, often dull, and highly ornamented, exactly like the picture—except when Delalande could compose a bit more on his own, at some distance from immediate royalty. In that case he wrote a more intelligent and expressive music which—in its place—was also admired and approved of by Louis.

The Paillard ensemble, playing here, is more than faintly old-fashioned by non-French standards. Not only do they use modern instruments, but they produce a poor approximation of the lively rhythms inherent in the old notation. Some people just don't know how to dance; it is the same in music, old or new. The faster parts do move along satisfactorily and the sound is brilliant. So look at that picture, and listen. Almost like audio/video.

By the way, the required (added) ornamentation is by Wiley Hitchcock, definitely not French; and so it is correct, even if the rhythm of the music tends to be slack. Not his fault. I used to know Wiley in New York.

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This French orchestra, led by Jean-Claude Malgoire, plays with a high-tension sound; everything is fast, almost hysterically so.

Handel: Music for the Royal Fireworks, Concerto for Two Horns in F, Ariodante Overture. La Grand Écurie et la Chambre du Roy, Jean-Claude Malgoire.
CBS M 42123.

Handel, the beefy, well-fed German who adopted England along with the Kings George as his new homeland, is claimed by the British and also (of course) by the Germans as one of their own, just on vacation. When the French get into the act, all sorts of things happen. That's what goes on here—the well-known French "authentic" instruments play Handel as he should sound—in France. Not exactly like the German and English.

Malgoire and his curiously named "orchestra" (The Grand Stable and the Chamber of the King) play with a high-tension sound that is not really quite in line with our usual image of Handel—double chins, white wig and all. Everything goes fast, almost hysterically fast. I've never heard such a furious clucking and cackling of old oboes and blatting of trumpets and horns! Of course, nobody knows precisely how all this genial music should go, and it is possible that Malgoire has the real Handel sound. It's enough to say that for a modern ear the effect is *very* French (and hence not very Handelian), and maybe we can like it that way.

The old instruments are expertly played but tend to be more out of tune than the corresponding instruments in several British versions of this same music, also performed with old-type instrumentation. You will note one oddity common to all such versions of this and other 18th-century music: The strings are relatively weak, the winds very prominent. Later strings were beefed up, after 1800, for a louder effect. The older violin is steely in sound and not very loud.

This LP is a revamping, apparently, of a two-record set that included—appropriately enough—the "Water Music." Now you can sample the French Handel on a single LP.

The "Royal Fireworks Music" had what must have been an inauspicious opening. It was given outdoors and 12,000 or so tried to get into Green Park in London to listen and to watch the fireworks. Part of the stands caught fire halfway through the music—I have heard that the fireworks also went up all at once—and the show was hastily concluded, evidently without injury. Handel did the whole piece complete a short time later—indoors.

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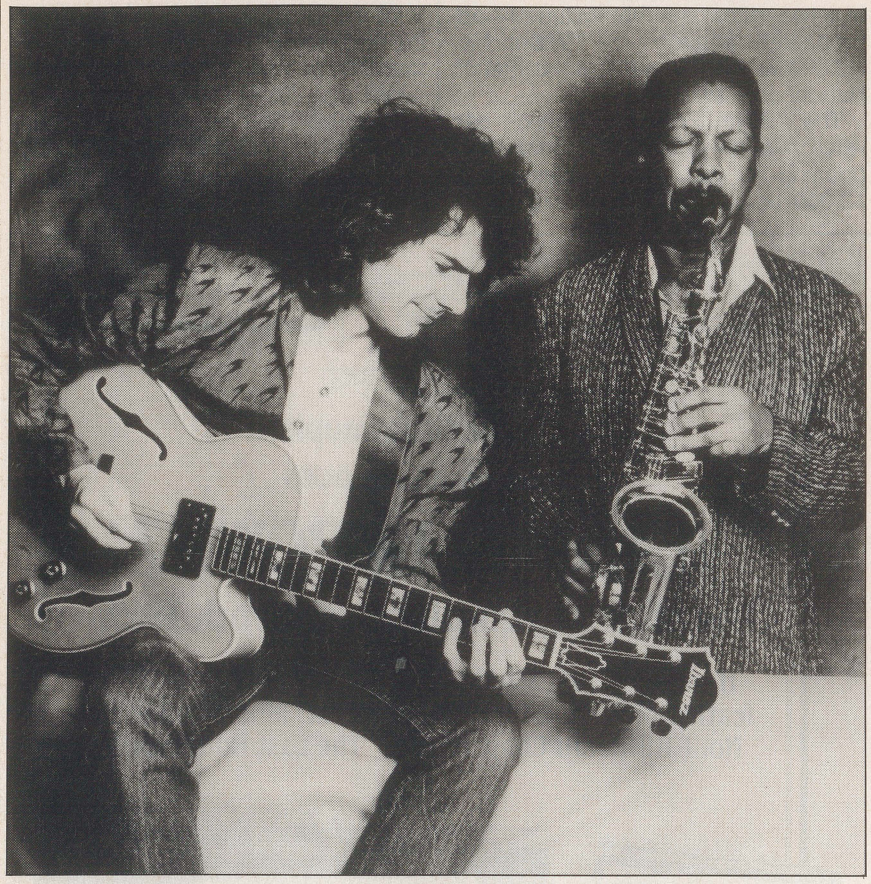

Song X: Pat Metheny & Ornette Coleman
Geffen GHS 24096, $8.98.

Sound: B– Performance: A+

Geffen Records is either the bravest major label in recent memory or the most distraught. *Song X*, Pat Metheny's first Geffen release after years on ECM, is not the major-label debut people expected. The title itself should have been a hint; it's a long way from "San Lorenzo."

Metheny's reputation lies in his panoramic landscapes laced with reverberant guitar. Brewing beneath the surface, however, have been blistering emotions and free-spirited impulses that have now found their match in the saxophone of Ornette Coleman. Coleman, the iconoclast who's been forging an individual method of composition and improvisation since the 1950s, is both a guide and celebrant.

Metheny's been bringing this cauldron to boil for some time, stoking it by playing with Coleman alumni on *80/81* and *Rejoicing*, slicing the edges of improvised sound with Dewey Redman, Billy Higgins and Charlie Haden. Haden once again makes his earthy presence and inner strength apparent on this album.

Song X is both exuberant and frightening, cathartic yet calculated. Taut unison lines are stretched across the churning rhythm section, only to give way to twisting, knotted solos. Ornette's alto cries like a lost warrior, cut with acidic wit and quiet nobility.

These musicians have found a common ground—but not in the jangling "harmolodic" structures Ornette's been exploring in recent years nor in Metheny's sculpted fusion. Instead, this harkens back to Ornette's '60s outings, marked by blistering, intuitive interplay emerging from a maze of unison leads.

That's the legacy that emboldens "Endangered Species." Metheny and Coleman cut through like berserkers of salvation on this 13-minute cyclone. Metheny, playing his digital computer guitar on most of the record, produces horn-like cries, slurring, rushing and intertwining with wails from Ornette that scrape the bone clean. It's a toe-to-toe blowout. Throughout, Jack DeJohnette, the definitive modern drummer, charges with controlled power and high-energy finesse, surrounded by the blipping satellites of Denardo Coleman's electronic drums.

There is wit as well as passion on *Song X*. The Pac Man lines of "Video Games," the witty jaunt of "Trigonometry" and the blues "Mob Job" bespeak the common goals and sensibilities of Coleman and Metheny.

Song X is a real-time experience, recorded live in the studio, with a crisp sound provided by engineer Jan Erik Kongshaug. Metheny has made many gorgeous recordings, but none has been as exhilaratingly confrontational as *Song X*. Of course, Ornette has confronted us for years. *John Diliberto*

False Accusations: The Robert Cray Band
Hightone 8005, $8.98. (Available from Hightone Records, P.O. Box 8064, Emeryville, Cal. 94662.)

Sound: B+ Performance: B

Robert Cray's peers have already voted him "most likely to succeed," and his last record, *Bad Influence*, earned him a guitar case full of critical praise. Not bad for a 32-year-old bluesman on an independent label.

On this album, his third, Cray's strengths are once again undeniable: A resonant, gospel-rooted voice; accomplished single-note guitar leads, and fresh, distinctive material. *False Accusations* boasts a carefully crafted polish that wouldn't sound out of place on the radio. Part of the credit goes to Cray's producers, Bruce Bromberg and Dennis Walker, who've produced more than their fare share of great blues sessions.

There's one catch, however. *False Accusations* is not what's often thought of as a typical blues album. Fans will listen in vain for a single track that rocks or for a guitar solo that's nursed from an anguished moan to a screaming crescendo. These cuts shun expected blues conventions and spot-

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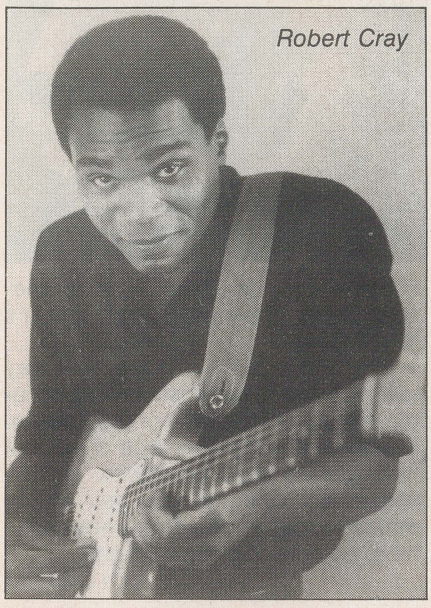


Robert Cray

light Cray's smooth singing; he plays no distracting guitar licks during a song's vocals, and there are no arrangements that might draw attention away from the original songs.

False Accusations isn't a sellout, just a redirection. One can admire Cray for trying to carve a distinctive niche for himself as a soulful balladeer, but something special that once distinguished him as a promising bluesman has been lost in the process. Cray's earliest fans might well trade most of this album for the forceful, biting "That's What I'll Do" from Cray's 1980 debut on the now-defunct Tomato Records. *Roy Greenberg*

Blanchard: New World Sonata; Telemann: Suite in A Minor, Amazing Grace. Hubert Laws, Quincy Jones, Chick Corea.
CBS Masterworks M 39858.

Sound: A Performance: A

Throughout his career, flutist Hubert Laws has taken opportunities to merge improvisation with classical pieces. I remember especially fondly two albums he recorded for CTI Records 15 years ago. The new album has similar intentions but at a new level.

Right off the top, I must take note of exceptional sound and pressing quality on this release. Laws' tone is always as rich and warm as it can be. He glows here.

The album is the product of two sessions, one for each side. On the first side is the Blanchard sonata. Harold Blanchard is the chief pianist, but Chick Corea appears for an improvised part. The rest of the small group is percussionist Ndugu Chancler, guitarist Bill Kanengiser, and bassist Bob Magnusson. They play beautifully and with real class. The composition itself is in three aptly named parts: "Security," "Peace," and "Joy."

Side two contains Telemann's "Suite in A Minor" and the hymm "Amazing Grace." Each is set for flute and a string orchestra conducted grandly by Quincy Jones. On "Amazing Grace" Dorothy Ashby has a lovely harp part and John Beasley adds Yamaha DX7. I've got to believe that recording the hymm was very, very special to the players. It has that feeling.

I know I'll be playing this album for many years. It already feels like an old friend. *Michael Tearson*

Into the Rainbow: Max Lasser's Ark
Relativity EMC 8058, $8.98.

Sound: B Performance: B+

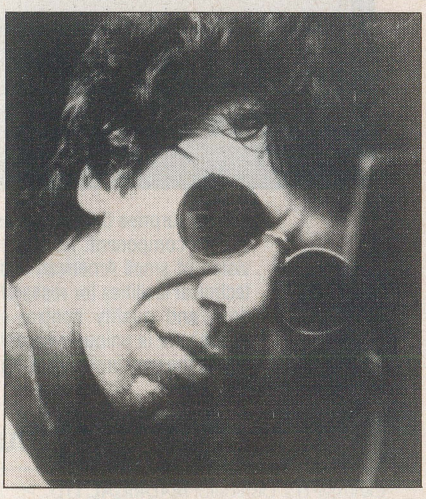
If I didn't know that Max Lasser was Andreas Vollenweider's touring guitarist, my first reference point would've been Pat Metheny. Like Metheny, Lasser favors spacious compositions, deft changes, and airy melodies that make you want to watch a travelog film while you listen. Nowhere is that more evident than on "More Sun, Please," with Lasser's backsliding phrasing over a thrusting rhythm and an ornamental piano, right out of Metheny's "San Lorenzo."

However, Lasser isn't a Metheny clone. His guitar playing has a clean, wide-open plains twang rather than Metheny's digitally delayed, resonant ring. "Ice—The Flood" opens bucolically before turning into a majestic Indian-toned rhythm of rolling thunder drums and a watercolor merger of Lasser's guitar and Christoph Stiefel's electronic flutes.

Like Vollenweider, Lasser creates intricate arrangements with lots of glistening keyboard textures and propulsive, colorful rhythms from drummer Walter Keiser and percussionist Pedro Haldeman, who are also Vollenweider cohorts. Engineer Eric Merz, another

Quincy Jones

Hubert Laws



Chick Corea

Max Lasser's guitar has a clean, wide-open plains twang; his compositions are spacious and airy, and his arrangements intricate.

Vollenweider associate, captures the Ark in crystal-clear form, full of natural resonance but without the Lexicon-delay sheen that marks Vollenweider's works.

While Vollenweider spins fairy tales of exotic worlds, Lasser is dashing through sun-speckled landscapes, maneuvering through shifting moods and environments. The shimmering bells and plaintive theme that open "Into the Rainbow" pave the way for the melancholic meditations woven by Lasser and Stiefel's reedy synthesizers and acoustic piano. "New Morning," on the other hand, is uplifting, with Stiefel's acoustic piano and synthesized bells rippling through Lasser's lyrical guitar.

Max Lasser's Ark is a pleasant way to travel. The musicianship is impeccable without being sterile or predictable. Lasser avoids the New Age drivel that he might be associated with, and he knows just when to grip you with a majestic cadence. No innovations here, but lots of pleasant sights.

John Diliberto

Dancing on the Edge: Roy Buchanan **Alligator AL 4747,** $8.98.

Sound: B+ Performance: A

After "Sneaking Godzilla Through the Alley" from last year's *When a Guitar Plays the Blues*, I couldn't wait to wrap my ears around Roy Buchanan's follow-up. Free of the "direction" that interfered with his earlier career output, Roy is now having the sort of fun that finally demonstrates his legendary stature.

Recording "live" with no overdubs (including vocals), Buchanan plugs his monster guitar straight into your frontal lobes with the relentless opening instrumental, "Peter Gunn," and doesn't let up until "Matthew," the gentle guitar duet (with Donald Kinsey) that ends side two. Buchanan's playing is alive with emotion and vitality and boasts a full, wild sound, rich in harmonics, that consistently threatens to go over the edge. Check out the string-choking blues of "The Choking Kind," the frenzied vibrato phrasing of the surf/blues "Jungle Gym," and the wailing slide of "Petal to the Metal."

Admirably augmented by Delbert McClinton's soulful vocals, Stan Szelest's honky-tonk piano, and the very tasty rhythm section of Larry Exum and Morris Jennings, *Dancing on the Edge* is definitely a disc that will get your party started! *Michael Wright*

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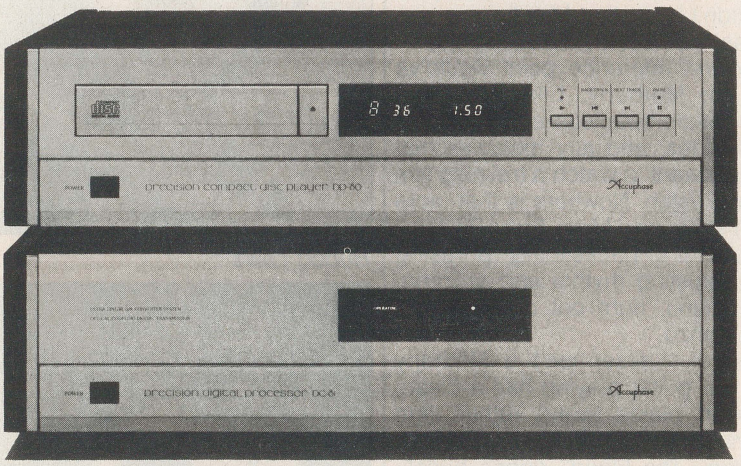

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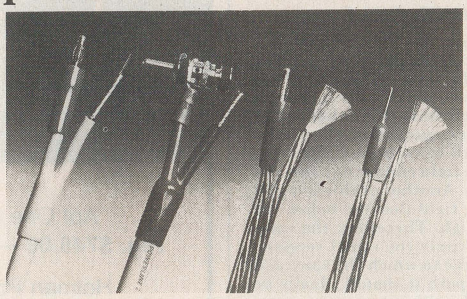

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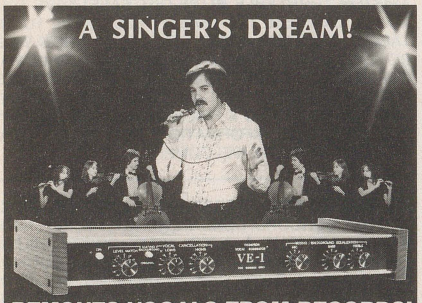

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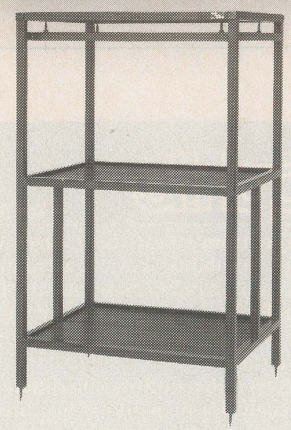

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Frequency Response	45-25000 Hz
Woofer Type	6" Dia., 3" Aluminum voice coil
Tweeter Type	Soft dome, Aluminum voice coil
Ferrofluid Cooling/Damping	Yes
Impedance	4 ohms
Sensitivity 1W/1M	91 db.
Magnetic Structure Weight	2.3 lbs./1.05 Kgs.
Dimensions	160mm/6¼" Dia., 67mm/2⅝" Depth
Mounting Depth	53mm/2⅛"
Net Weight	2.85 lbs./1.3 Kgs.
Front Grill	Integral metal grill

INTEGRA-2 MkII
Integrated 2-way 8" / Dome Tweeter (Adapted for bi-amp)

Power Handling Capacity	120 Watts RMS
Frequency Response	35-25000 Hz
Woofer Type	8" Dia., 3" Aluminum voice coil
Tweeter Type	Soft dome, Aluminum voice coil
Ferrofluid Cooling/Damping	Yes
Impedance	4 ohms
Sensitivity 1W/1M	92 db.
Magnetic Structure Weight	2.3 lbs./1.05 Kgs.
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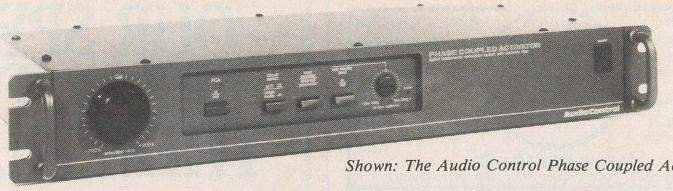

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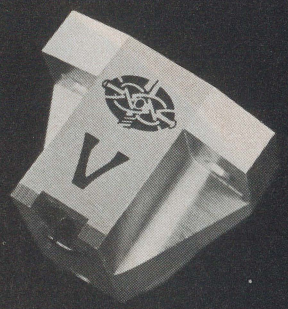

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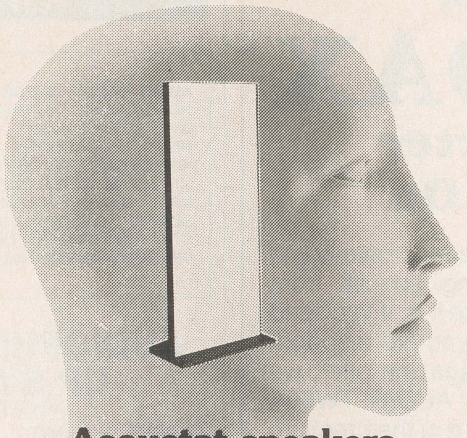

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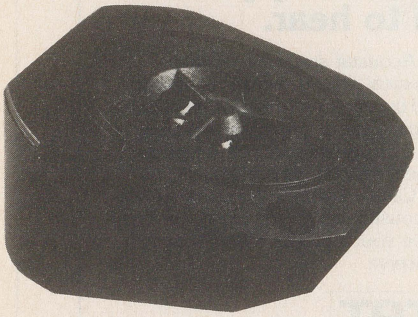

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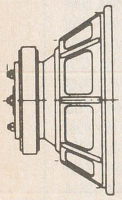

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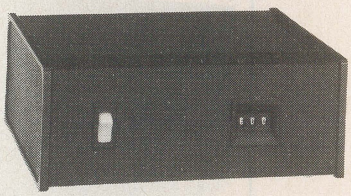

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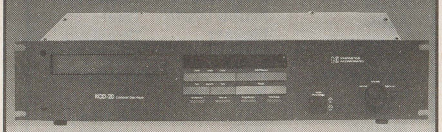

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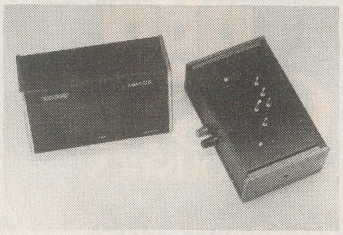

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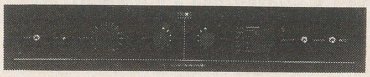

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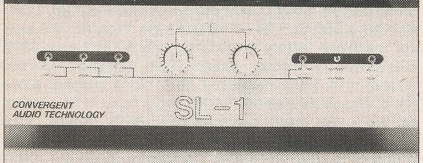

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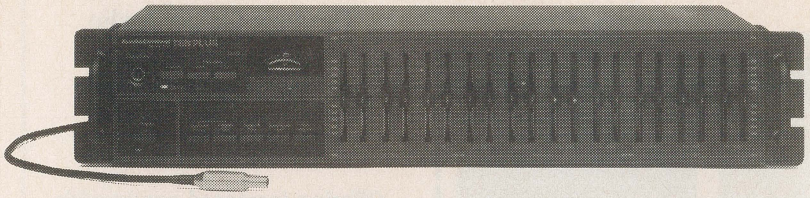

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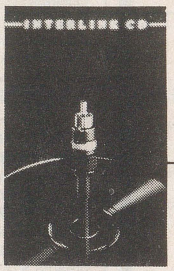

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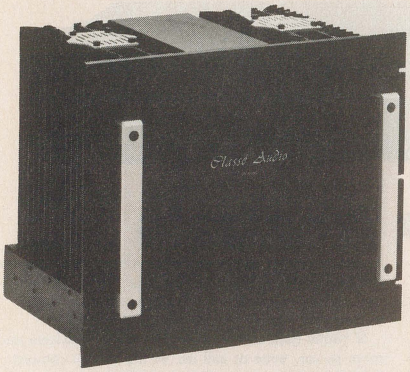

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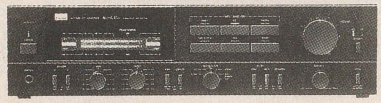

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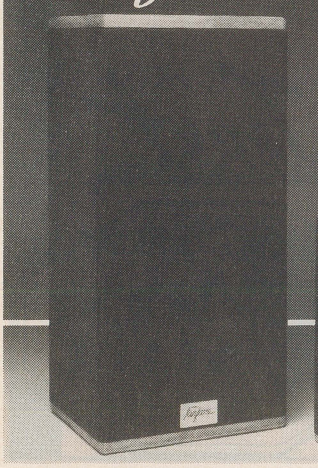

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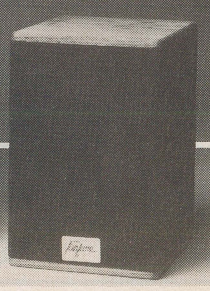

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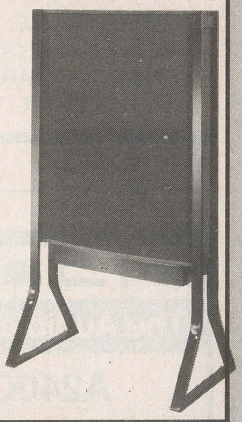

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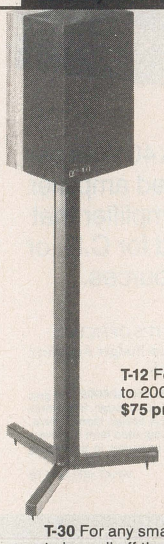

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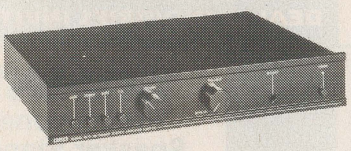

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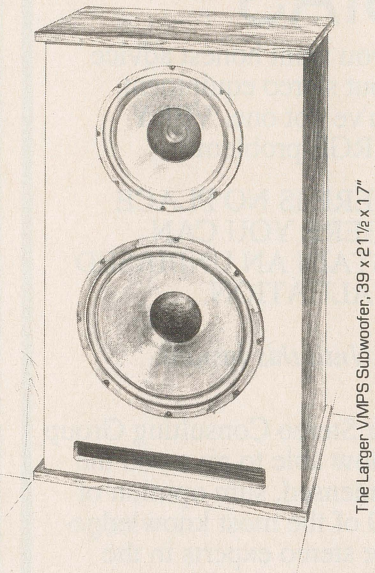

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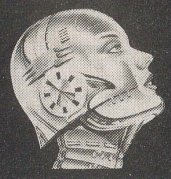

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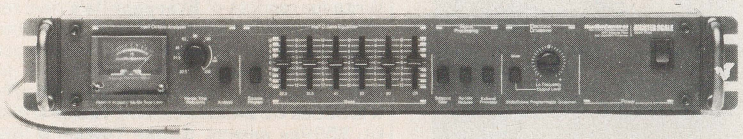

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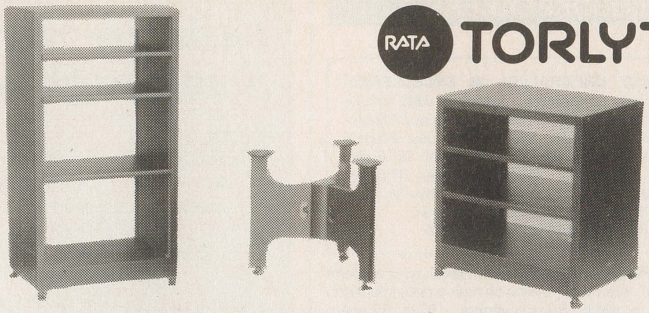

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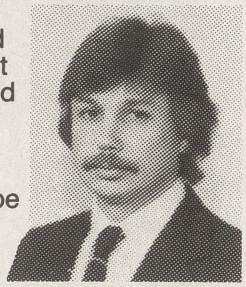

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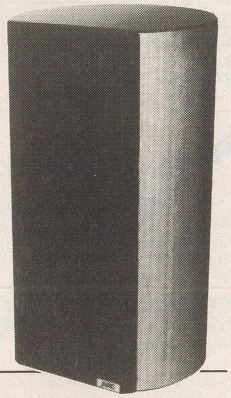

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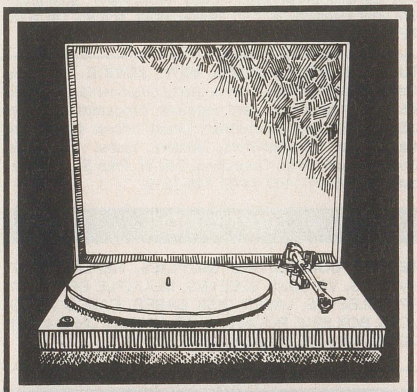

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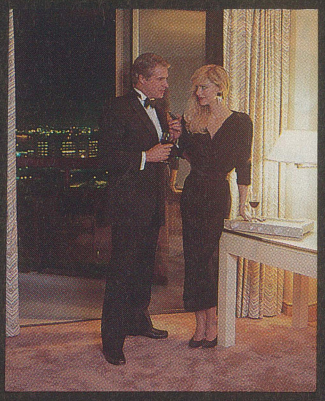

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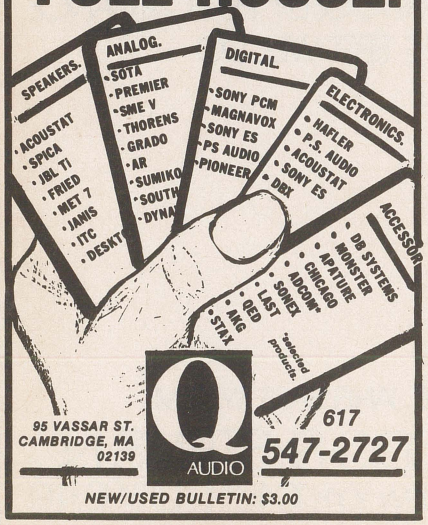

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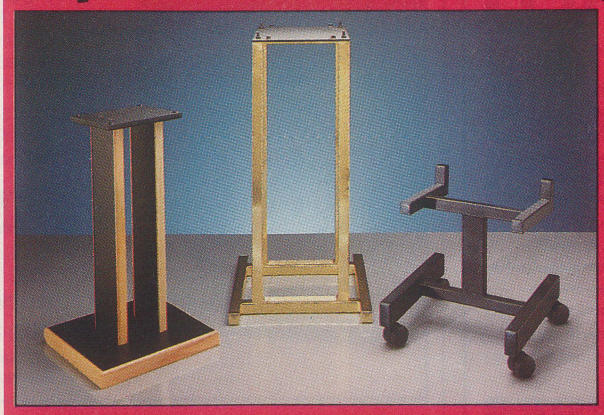

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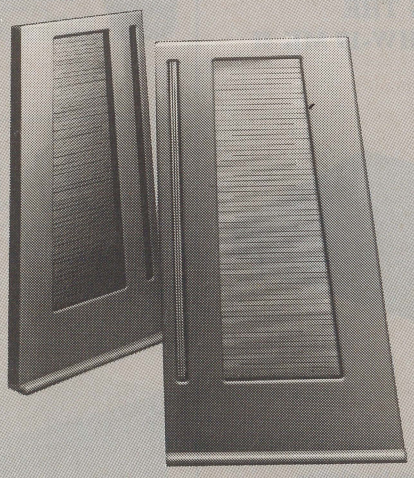

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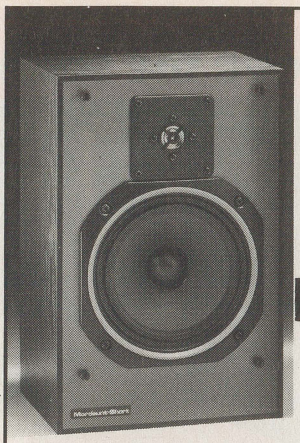

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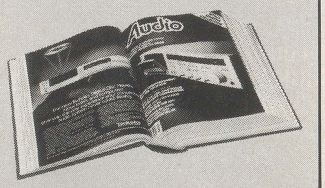

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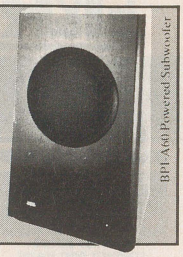
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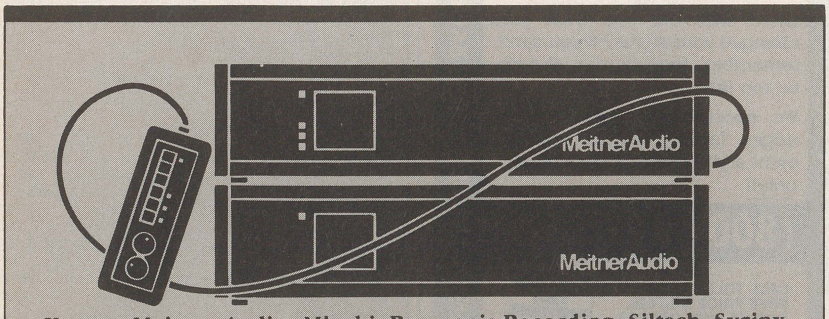

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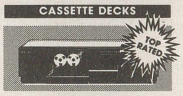

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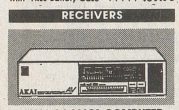

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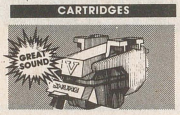

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1986 COMPANY ADDRESSES

If you've come this far through our Directory, you already have a good notion of how many hundreds of manufacturers are represented. To be exact, there are 392; most, as you'll see from the list of company addresses that follows, are from the U.S., but there are also a large handful from Canada and one from as far away as Israel.

Comparing this list to last year's reveals a few interesting facts: We've hauled in 72 companies that did not appear last year, and deleted 52 that did make it into our previous Directory. That means we're bigger by 20 manufacturers. A sign that audio's booming, or that *Audio*'s booming? We like to think it's a little of both. —**E.M.**

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35 York Industrial Park
Randolph, Mass. 02368

Apt Corp.
176 Walker St.
Lowell, Mass. 01854

AR
330 Turnpike St.
Canton, Mass. 02021

ARC
2888 Bluff St., #438
Boulder, Colo. 80301

Argent
See Direct Sound

Artech Electronics
699 Meloche Ave.
Dorval, Que.
Canada H9P 2S4

COMPANY ADDRESSES

A & S Speakers
2371 Dahlia St.
Denver, Colo. 80207

Assemblage
P.O. Box 815
Branford, Conn. 06405

Astatic
P.O. Box 120
Harbor & Jackson Sts.
Conneaut, Ohio 44030

ATC
See Audio Ecstasy

Athena Audio
P.O. Box 210465
San Francisco, Cal. 94121

Audible Illusions
See Apax Marketing

Audio Advancements
P.O. Box 15
Verona, N.J. 07044

Audio Concepts
1631 Caledonia St.
LaCrosse, Wisc. 54603

Audio Control
P.O. Box 3199
Lynnwood, Wash. 98036

Audio Design Associates
610 Mamaroneck Ave.
White Plains, N.Y. 10605

Audio Ecstasy
231 Elwood Dr.
Rochester, N.Y. 14616

Audio Interface
P.O. Box 7369
Van Nuys, Cal. 91409

Audiolab
See Artech

Audiophile Systems
8709 Castle Park Dr.
Indianapolis, Ind. 46256

Audio Pro
See Sonic Research

Audio Pulse
See API

AudioQuest
629 Camino de Los Mares
#306
San Clemente, Cal. 92672

Audio Research
6801 Shingle Creek Pkwy.
Minneapolis, Minn. 55430

Audio Services
See Active Audio

AudioSource
1185 Chess Drive
Suite G
Foster City, Cal. 94404

AudioStream
P.O. Box 1099
Buffalo, N.Y. 14210

Audio-Technica
1221 Commerce Dr.
Stow, Ohio 44224

Audio Techniques
1619 Broadway, 4th Floor
New York, N.Y. 10019

Audire
9576 El Tambor Ave.
Fountain Valley, Cal. 92708

Audix
P.O. Box 265
San Carlos, Cal. 94070

A.V.A.
AUDIO by Van Alstine
2202 River Hills Dr.
Burnsville, Minn. 55337

Azden Corp.
147 New Hyde Park Rd.
Franklin Square, N.Y. 11010

B

Babb Audio
3230A Towerwood
Farmers Branch, Tex. 75234

Bang & Olufsen
1150 Feehanville Dr.
Mt. Prospect, Ill. 60056

Barcus-Berry Electronics
5500 Bolsa Ave., Suite 245
Huntington Beach, Cal. 92649

BASF Systems
Crosby Dr.
Bedford, Mass. 01730

Michael Baskin Co.
4650 Arrow Highway, #F4
Montclair, Cal. 91763

Beard Audio
See Wharfedale

Becker Electronics
Route 145
East Durham, N.Y. 12423

Becker-Swan
Bellman Yacht Bldg.
19 South Water St.
Athens, N.Y. 12015

Bedini Electronics
13410 Sayre St.
Sylmar, Cal. 91342

BEL
Brown Electronic Labs
2534 Berryessa Rd.
San Jose, Cal. 95132

Benz-Micro
See Active Audio

David Berning Co.
11007 Candlelight La.
Potomac, Md. 20854

B.E.S.
12753 Moore St.
Cerritos, Cal. 90701

Beveridge Speakers
See California Audio Technology

Beyerdynamic
5-05 Burns Ave.
Hicksville, N.Y. 11801

BGR
B. G. Roberts Audio
137 Route 22 East
Greenbrook, N.J. 08812

BGW Systems
13130 South Yukon Ave.
Hawthorne, Cal. 90250

Biamp Systems
P.O. Box 2160
Portland, Ore. 97208

B & K Components
P.O. Box 331
Orchard Park, N.Y. 14127

Bose Corp.
100 The Mountain Rd.
Framingham, Mass. 01701

Boston Acoustics
247 Lynnfield St.
Peabody, Mass. 01960

Boulder Amplifiers
See Silver Lake Research

Bozak
326 South St.
New Britain, Conn. 06051

British Fidelity
(In U.K., Musical Fidelity)
See RCS Audio

Brooke Siren Systems
See Klark-Teknik

Bryston Manufacturing Ltd.
57 Westmore Dr.
Rexdale, Ont.
Canada M9V 3Y6

Brystonvermont
R.F.D. 4, Berlin
Montpelier, Vt. 05602

BSC
Bennett Sound Corp.
6029 Reseda Blvd.
Tarzana, Cal. 91356

BSM
See Laser Audio

B & W
See Anglo-American Audio

C

Cabasse
See Madrigal Ltd.

Cadawas Acoustics
92 Oneida Ave.
Staten Island, N.Y. 10301

California Audio Labs
21962 Annette Ave.
El Toro, Cal. 92630

California Audio Technology
8141 E. 2nd St., Suite 515
Downey, Cal. 90241

Camber Acoustics
7101 Park Ave., Suite 120
Montreal, Que.
Canada H3N 1X9

Cambridge Acoustics
See Michael Baskin Co.

Canason Audio
1759 Britannia Rd. East
Unit No. 1
Mississauga, Ont.
Canada L4W 4E1

Canon
One Canon Plaza
Lake Success, N.Y. 11042

Canton
254 First Ave. North
Minneapolis, Minn. 55401

Carver Corp.
P.O. Box 1237
Lynnwood, Wash. 98036

Cascade Audio Systems
P.O. Box 2345
Santa Clara, Cal. 95055

Castle Acoustics
See May Audio Marketing

CDE
Classical Design & Engineering
See Int'l. Trade Associates

Celestion Industries
P.O. Box 521
Holliston, Mass. 01746

Cello Ltd.
55 Circular Ave.
Hamden, Conn. 06514

Certron
1651 S. State College Blvd.
Anaheim, Cal. 92806

Cerwin-Vega
12250 Montague St.
Arleta, Cal. 91331

Chapman Sound Co.
P.O. Box 18123
Seattle, Wash. 98118

Classé Audio
9414 Cote de Liesse Rd.
Lachine, Que.
Canada H8T 1A1

Clearaudio
See Souther

conrad-johnson design
2800R Dorr Ave.
Fairfax, Va. 22031

Continuum Electronics
1747 35th St.
Sacramento, Cal. 95825

Convergent Audio Technology
24 Falcon Dr.
West Henrietta, N.Y. 14586

Mitchell A. Cotter Sales
P.O. Box 3456
Chapel Hill, N.C. 27514

Counterpoint
10635 Roselle St.
San Diego, Cal. 92121

Creek Audio Systems
See Music Hall

Crest Audio
150 Florence Ave.
Hawthorne, N.J. 07506

Crown International
1718 West Mishawaka Rd.
Elkhart, Ind. 46517

CSI
Calibration Standard Instruments
P.O. Box 2727
Oakland, Cal. 94602

Curtis Mathes
1411 Greenway Dr.
Irving, Tex. 75038

D

Dahlquist
601 Old Willets Path
Hauppauge, N.Y. 11788

DALI
Danish American Ltd. Inc.
P.O. Box 55386
Valencia, Cal. 91355

D'Ascanio Audio
11450 Overseas Hwy.
Marathon, Fla. 33050

DAX Audio Group
1231 S.E. Gideon St.
Portland, Ore. 97202

Dayton Wright Group
97 Newkirk Road North
Richmond Hill, Ont.
Canada L4C 3G4

dB Plus
See API

DB Systems
Main St.
Rindge Center, N.H. 03461

dbx Inc.
71 Chapel St.
Newton, Mass. 02195

DCM Corp.
670 Airport Blvd.
Ann Arbor, Mich. 48104

Decca
See Rocelco

COMPANY ADDRESSES

DeCoursey Engineering Laboratory
11828 Jefferson Blvd.
Culver City, Cal. 90230

Definitive Audio
P.O. Box 3226
Peoria, Ill. 61614

Dennesen Electrostatics
P.O. Box 51
Beverly, Mass. 01915

Denon
27 Law Dr.
Fairfield, N.J. 07006

Design Acoustics
See Audio-Technica

Desktop Loudspeaker Systems
2800 Mercier St.
Kansas City, Mo. 64108

Digitrac
P.O. Box 392
Plainview, N.Y. 11803

Dimensional Optics
See Mavrick

Direct Sound
150 Fifth Ave.
Suite 845
New York, N.Y. 10011

Direct-to-Tape Recording
14 Station Ave.
Haddon Heights, N.J. 08035

Distech
Discrete Technology
2911 Oceanside Rd.
Oceanside, N.Y. 11572

Dual
See Ortofon

Duntech Speakers
See W & W Audio

Dynamic Electro Acoustics
3604 Main St.
Amherst, N.Y. 14226

Dynaudio
East
See Madisound or A & S
West
See Just Speakers

Dynavector
11 Elkins Rd.
East Brunswick, N.J. 08816

Dynavector/Audio Interface
See Audio Interface

E

Ebony Acoustics
See Mavrick

Ego Systems
50 Werman Court
Plainview, N.Y. 11803

Eidolon Research
P.O. Box 7717
Ann Arbor, Mich. 48107

Electrocompaniet
See Trade Commission of Norway

Electron Kinetics
1055 Empire Dr.
Lake Havasu City, Ariz. 86403

Electro-Voice
600 Cecil St.
Buchanan, Mich. 49107

Emerson Radio
One Emerson La.
North Bergen, N.J. 07047

Eminent Technology
508 Cactus St.
Tallahassee, Fla. 32304

EMT-Franz
See Gotham Audio

Energy
See API

Entec
1012 Morse Ave., #19
Sunnyvale, Cal. 94089

Entré
See Analog Excellence

EPI
Epicure Products
25 Hale St.
Newburyport, Mass. 01950

Epik Audio
1720 Lilac Dr.
Walnut Creek, Cal. 94595

Epoch
See Stanton

ESM/Energy
See API

Esoteric Audio Research
See Mavrick

Esoteric Sound
4813 Wallbank Ave.
Downers Grove, Ill. 60515

Essence
805 'M' St.
Lincoln, Nebr. 68508

ESS Laboratory
9613 Oates Dr.
Sacramento, Cal. 95827

Euphonic Audio
RD 1, Box 266
Oakwood Dr.
New Egypt, N.J. 08533

F

Fanfare Acoustics
4650 Arrow Hwy., F-4
Montclair, Cal. 91763

Fidelity Research
See Bryston Mfg.

Fidelus Audio
See Apax Marketing

Fisher
21314 Lassen St.
Chatsworth, Cal. 91311

FMS
Favorite Music Systems
319 A St. (Rear)
Boston, Mass. 02210

Focal
1531 Lookout Dr.
Agoura, Cal. 91301

Focus Speaker Systems
1101 East Second St.
Dayton, Ohio 45403

Fourier Systems
578 Nepperhan Ave.
Yonkers, N.Y. 10701

Frankmann Research
P.O. Box 125
Greenville, Ohio 45331

Fried Products
7616 City Line Ave.
Philadelphia, Pa. 19151

Fuji
555 Taxter Rd.
Elmsford, N.Y. 10523

Fujitech
See Monarchy Engineering

Fulton Audio
P.O. Box 22537
Minneapolis, Minn. 55422

G

Garrott Brothers
See Audio Advancements

General Electric
One College Blvd.
Portsmouth, Va. 23705

Genesis Physics
225 Heritage Ave.
Portsmouth, N.H. 03801

GNP
Gross National Products
1244 East Colorado Blvd.
Pasadena, Cal. 91106

Goldbug Labs
See RMI

Gold Ribbon Concepts
211 East 11th St.
Coralville, Iowa 52241

Goldring
See Import Audio

Gold Sound
P.O. Box 141
Englewood, Colo. 80110

Goldstar Electronics
1050 Wall St. West
Lyndhurst, N.J. 07071

Gordon Instruments
P.O. Box 794
Blacksburg, Va. 24060

Gotham Audio
1790 Broadway
New York, N.Y. 10019

Gott Labs
424 Clay Pitts Rd.
East Northport, N.Y. 11731

Grace
See Sumiko

Grado Laboratories
4614 7th Ave.
Brooklyn, N.Y. 11220

Joseph Grado Signature
921 Tice Pl.
Westfield, N.J. 07090

Grommes
See Precision Electronics

GSI
622 Bloomfield Ave.
Bloomfield, N.J. 07003

Reuben Guss Enterprises
215 West 92nd St.
New York, N.Y. 10025

H

David Hafler Co.
5910 Crescent Blvd.
Pennsauken, N.J. 08109

Harman America
Harman/Kardon
240 Crossways Park West
Woodbury, N.Y. 11797

Harms Labs
3040 West Vine Dr.
Ft. Collins, Colo. 80521

Hartley Products
1200 North 23rd St.
Suite 105
Wilmington, N.C. 28405

Heco
See Alphasonik

Heybrook
See D'Ascanio Audio

Highphonic
See Analog Excellence

Hitachi
401 West Artesia Blvd.
Compton, Cal. 90220

H.L.X.
See Apature

I

IAI
International Audio Imports
723 Bound Brook Rd.
Dunellen, N.J. 08812

Imaged Stereo
15445 Ventura Blvd.
Suite 1085
Sherman Oaks, Cal. 91413

Import Audio Ltd.
3149 Shenandoah St.
St. Louis, Mo. 63104

Impulse
Route 2, Box 477
Dover, Ark. 72837

Infinity Systems
9409 Owensmouth Ave.
Chatsworth, Cal. 91311

Innotech
77 Clinton St.
Brooklyn, N.Y. 11201

Innovative Techninques
703 Revere Dr.
Herbertsville, N.J. 08724

Instant Replay
2951 South Bayshore Dr.
8th Floor
Coconut Grove, Fla. 33133

Interaudio/Bose
100 The Mountain Rd.
Framingham, Mass. 01701

International Trade Associates
7700 Old Branch Ave.
Suite C-102
Clinton, Md. 20735

Interworld Electronics
5601 N.W. 78th Ave.
Miami, Fla. 33166

Itone Audio
3412 Eric
El Sobrante, Cal. 94803

J

Jadis
See Madrigal Ltd.

Jamo Hi-Fi
425 Huehl Rd., 3A
Northbrook, Ill. 60062

Janis
See John Marovskis

JBL
See Harman America

Jensen
4136 North United Pkwy.
Schiller Park, Ill. 60176

Jordan
E. J. Jordan, U.S.A.
301 North Harrison St.
Bldg. B, Suite 252
Princeton, N.J. 08540

J.P.W. Loudspeakers
See Power Audio Distr.

JRM
3716 Broadway N.E.
Knoxville, Tenn. 37917

COMPANY ADDRESSES

JS Audio
643 Speedwell Ave.
Morris Plains, N.J. 07950

JSE
519 East Middle Turnpike
Manchester, Conn. 06040

Just Speakers
3170 23rd St.
San Francisco, Cal. 94110

JVC
41 Slater Dr.
Elmwood Park, N.J. 07407

K

Kama-Ispeak
Kibbutz Beit Kama
D.N. Negev 85 325
Israel

KEF
14120-K Sullyfield Cir.
Chantilly, Va. 22021

Kenwood
1315 East Watsoncenter Rd.
Carson, Cal. 90745

Kevek Loudspeaker Technology
See RMI

Kindel Audio
3615 Presley Ave.
Riverside, Cal. 92507

Kinergetics
6029 Reseda Blvd.
Tarzana, Cal. 91356

Kinetic Audio
P.O. Box 2147
Des Plaines, Ill. 60018

Kirksaeter
4648 Evansdale Rd.
Woodbridge, Va. 22193

Kiseki
See Sumiko

Klark-Teknik
30B Banfi Plaza North
Farmingdale, N.Y. 11735

Klein & Hummel
See Gotham Audio

KLH
100 Randolph Rd.
CN 6700
Somerset, N.J. 08873

Klipsch
P.O. Box 688
Hope, Ark. 71801

Klyne Audio Arts
721 Howard Ave.
Olympia, Wash. 98506

Koetsu
See Assemblage

Koss
4129 North Port Washington
Milwaukee, Wisc. 53212

Krell Industries
20 Higgins Dr.
Milford, Conn. 06460

Kyocera
100 Randolph Rd.
CN 6700
Somerset, N.J. 08873

L

Lancer Electronics
12340 McCann Dr.
Santa Fe Springs, Cal. 90670

Laser Audio
1140 Eighth Line
Oakville, Ont.
Canada L6H 2R4

Lazarus Electronics
701-703 Ivy St.
Glendale, Cal. 91204

Mark Levinson
See Madrigal Ltd.

Lineage
230 West 55th St.
New York, N.Y. 10019

Linn Products
See Audiophile Systems

Logan Labs
See Symdex

Loran
Loranger Manufacturing
10-48 Clark St.
Warren, Pa. 16365

LSR&D
481 Buckingham Cir.
Marietta, Ga. 30066

Luxman
Div., Alpine Electronics
19145 Gramercy Pl.
Torrance, Cal. 90501

Lydkraft
See Audio Techniques

M

Madisound Speakers
P.O. Box 4283
Madison, Wisc. 53711

Madrigal Ltd.
P.O. Box 781
Middletown, Conn. 06457

Magnat
70 Atlantic Ave.
Marblehead, Mass. 01945

Magnavox
See NAP Consumer Electronics

Magnepan
1645 Ninth St.
White Bear Lake, Minn. 55110

Magnum/Dynalab
8 Strathearn Ave., Unit 9
Brampton, Ont.
Canada L5T 4L9

Magnus
See EPI

MAN
6301 Riggs Place
Los Angeles, Cal. 90045

Marantz
20525 Nordhoff St.
Chatsworth, Cal. 91311

Mariah Acoustics
Route 23, RD Box 381
Oneonta, N.Y. 13820

John Marovskis Audio Systems
2889 Roebling Ave.
Bronx, N.Y. 10461

Martin-Logan
P.O. Box 741
Lawrence, Kans. 66044

Mastercraft Audio
Box 2661
Huntington Station, N.Y. 11746

Mavrick Audiophile Marketing
9016 Wilshire Blvd.
Suite 2000
Beverly Hills, Cal. 90211

Maxell
60 Oxford Dr.
Moonachie, N.J. 07074

May Audio Marketing
646 Boul. Guimond
Longueuil, Que.
Canada J4G 1P8

Mayware
P.O. Box 58
Edgware, Middlesex
England, HA8 7UE

McIntosh Laboratory
2 Chambers St.
Binghamton, N.Y. 13903

McLaren Audio
See AudioQuest

Meitner Audio
See Assemblage

Melos Audio
723 Bound Brook Rd.
Dunellen, N.J. 08812

Memorex
Memtek Products
P.O. Box 58118
Santa Clara, Cal. 95052

Meridian
See Madrigal Ltd.

Merlin International
217 Alexander St.
Rochester, N.Y. 14607

Merrill Audio
2125 Central Ave.
Memphis, Tenn. 38104

J. A. Michell
See RMI

Micro Seiki
See Analog Excellence

Milspec
See Reference Audio Imports

Minolta
101 Williams Dr.
Ramsey, N.J. 07446

Mirage Acoustics
See API

Mirror Image Audio
700 Springvale Rd.
Great Falls, Va. 22066

Mission Electronics
5985 Atlantic Dr.
Unit 6
Mississauga, Ont.
Canada L4W 1S4

Mitsubishi
5757 Plaza Dr.
Cypress, Cal. 90630

Miyabi
See Assemblage

M & K
Miller & Kreisel
10391 Jefferson Blvd.
Culver City, Cal. 90230

Modern Audio Consultants
East
112 Swanhill Court
Baltimore, Md. 21208
West
2888 Bluff St., Suite 210
Boulder, Colo. 80303

Monarchy Engineering
380 Swift Ave., Unit 21
South San Francisco, Cal. 94080

Mondial
See Canason Audio

Monster Cable
101 Townsend St.
San Francisco, Cal. 94107

Mordaunt-Short
See RCS Audio

Morel Acoustics
414 Harvard St.
Brookline, Mass. 02146

Motif
See conrad-johnson

MRM Audio
See Active Audio

MTX
One Mitek Plaza
Winslow, Ill. 61089

Music Hall
108 Station Rd.
Great Neck, N.Y. 11023

Music Reference
1525 Cliff Dr.
Santa Barbara, Cal. 93109

Music & Sound Imports
30 Snowflake Rd.
Huntingdon Valley, Pa. 19006

N

NAD
675 Canton St.
Norwood, Mass. 02062

Nady Systems
1145 65th St.
Oakland, Cal. 94608

Nagaoka
See Ångstrom Associates

Naiad Products
P.O. Box 1250
Falls Station
Niagara Falls, N.Y. 14303

NAIM Audio
1759 North Sedgewick St.
Chicago, Ill. 60614

Nakamichi U.S.A.
19701 South Vermont Ave.
Torrance, Cal. 90502

NAP Consumer Electronics
P.O. Box 14810
Knoxville, Tenn. 37914

NEC Home Electronics
1255 Michael Dr.
Wood Dale, Ill. 60191

Nelson-Reed
15810 Blossom Hill Rd.
Los Gatos, Cal. 95030

Nestorovic Labs
8307 N.E. 110th Place
Kirkland, Wash. 98034

Neumann
See Gotham Audio

New York Acoustics
167 Saw Mill River Rd.
Yonkers, N.Y. 10701

New York Audio Laboratories
250 Clearbrook Rd.
Elmsford, N.Y. 10523

Nikko Audio
5830 South Triangle Dr.
Commerce, Cal. 90040

Nobis
5412 West Burnham St.
Milwaukee, Wisc. 53219

Nonspeaker
See Mavrick

Norman Laboratories
10520 Plano Rd.
Suite 206
Dallas, Tex. 75238

COMPANY ADDRESSES

NOVA Electro-Acoustics
P.O. Box 25488
Los Angeles, Cal. 90025

Novak Loudspeaker
Merrits Island Rd.
Pine Island, N.Y. 10969

Numark Electronics
P.O. Box 493
Edison, N.J. 08818

O

Odyssey Engineering
See Reference Audio Imports

Ohm Acoustics
241 Taaffe Place
Brooklyn, N.Y. 11205

Omni Sound
4833 Keller Springs
Dallas, Tex. 75248

Onix Audio
See Music Hall

Onkyo
200 Williams Dr.
Ramsey, N.J. 07446

Oracle
505, Boul. Industriel
Sherbrooke, Que.
Canada J1L 1X7

Orpheus
87 South Sixth St.
Locust Valley, N.Y. 11560

Ortofon
122 Dupont St.
Plainview, N.Y. 11803

Otari
2 Davis Dr.
Belmont, Cal. 94002

P

PAC
Perfectionist Audio Components
172 Ocean Ave.
Lynnbrook, N.Y. 11563

Packburn Electronics
P.O. Box 335
DeWitt, N.Y. 13214

Paisley Research
See API

Panasonic
One Panasonic Way
Secaucus, N.J. 07094

Paradigm
See AudioStream

Parasound Products
945 Front St.
San Francisco, Cal. 94111

Pegasus
See Artech

Pentagram Loudspeaker
207-19 35th Ave.
Bayside, N.Y. 11361

Pentax
35 Inverness Dr. East
Englewood, Colo. 80112

Perfectionist Audio Ltd.
132 West Walnut Park Dr.
Philadelphia, Pa. 19120

Perreaux
See Signet

Phase Technology
6400 Youngerman Circle
Jacksonville, Fla. 32244

Philco
See NAP Consumer Electronics

Phobos
See Active Audio

Pickering
Sunnyside Blvd.
Plainview, N.Y. 11803

Pink Triangle
See IAI

Pinnacle
See Ego Systems

Pioneer
P.O. Box 1720
Long Beach, Cal. 90801

Plasmatronics
2460 Alamo, S.E.
Suite 101
Albuquerque, N.M. 87106

PLC Audio
13-16 133rd Place
College Point, N.Y. 11356

Polk Audio
5601 Metro Dr.
Baltimore, Md. 21215

Posthorn Recordings
142 West 26th St.
New York, N.Y. 10001

Power Audio Distributors
4632 Crossroads Park Dr.
Liverpool, N.Y. 13088

Precision Electronics
9101 King St.
Franklin Park, Ill. 60131

Premier
See Sumiko

Pres Speakers
183 Main St.
Northampton, Mass. 01060

Princeton Acoustics
301 North Harrison St.
Bldg. B., Suite 252
Princeton, N.J. 08540

Proac
See Modern Audio Consultants

Prodigee Acoustics
2783 West Hampden Ave.
Englewood, Colo. 80110

Promethean Audio Products
130 East Winnick
Las Vegas, Nev. 89109

Proton
737 West Artesia Blvd.
Compton, Cal. 90220

PS Audio
4145 Santa Fe Rd.
Building #2
San Luis Obispo, Cal. 93401

PSE
Professional Systems Eng.
7401 Lyndale Ave. South
Minneapolis, Minn. 55423

Q

QED Hi Fi
See May Audio Marketing

Quad Electroacoustics
14120-K Sullyfield Cir.
Chantilly, Va. 22021

Quasar
9401 West Grand Ave.
Franklin Park, Ill. 60131

Quicksilver Audio
6301 Herndon Place
Stockton, Cal. 95209

R

RAKS
201 Route 17, Suite 300
Rutherford, N.J. 07070

Rane
6510 216th St.
Mountainlake Terr., Wash.
98043

RATA
See May Audio Marketing

Rauna
See Scandinavian Sounds

RCA
600 North Sherman Dr.
Indianapolis, Ind. 46201

RCS Audio International
1055 Thos. Jefferson St.
N.W.
Washington, D.C. 20007

Realistic
Radio Shack
One Tandy Center
Fort Worth, Tex. 76102

Recoton
46-23 Crane St.
Long Island City, N.Y. 11101

Reel to Real Designs
2105 Claremont
Springfield, Ill. 62703

Reference Audio Imports
Route 1, Box 2650
Mt. Vernon, Maine 04352

Rega Research
See Import Audio

Renaissance Acoustics
802 N. Main St., Suite 240
Gainesville, Fla. 32608

Respons
See Transparent Audio Marketing

Revolver
See Music Hall

Revox
1425 Elm Hill Pike
Nashville, Tenn. 37210

RH Labs
6844 S.W. 60th Ave.
Portland, Ore. 97219

RMI
Reference Monitor Intl.
2615 Jacaranda
Carlsbad, Cal. 92008

Robertson Audio
P.O. Box 8449
Van Nuys, Cal. 91409

Rocelco
24 Viceroy Rd., Unit 1
Concord, Ont.
Canada L4K 2L9

Rogers
See Naiad Products

Rogersound Labs
8381 Canoga Ave.
Canoga Park, Cal. 91304

Rohrer Acoustic Design
P.O. Box 884411
San Francisco, Cal. 94188

Rossman Audio
597 West Hillside Ave.
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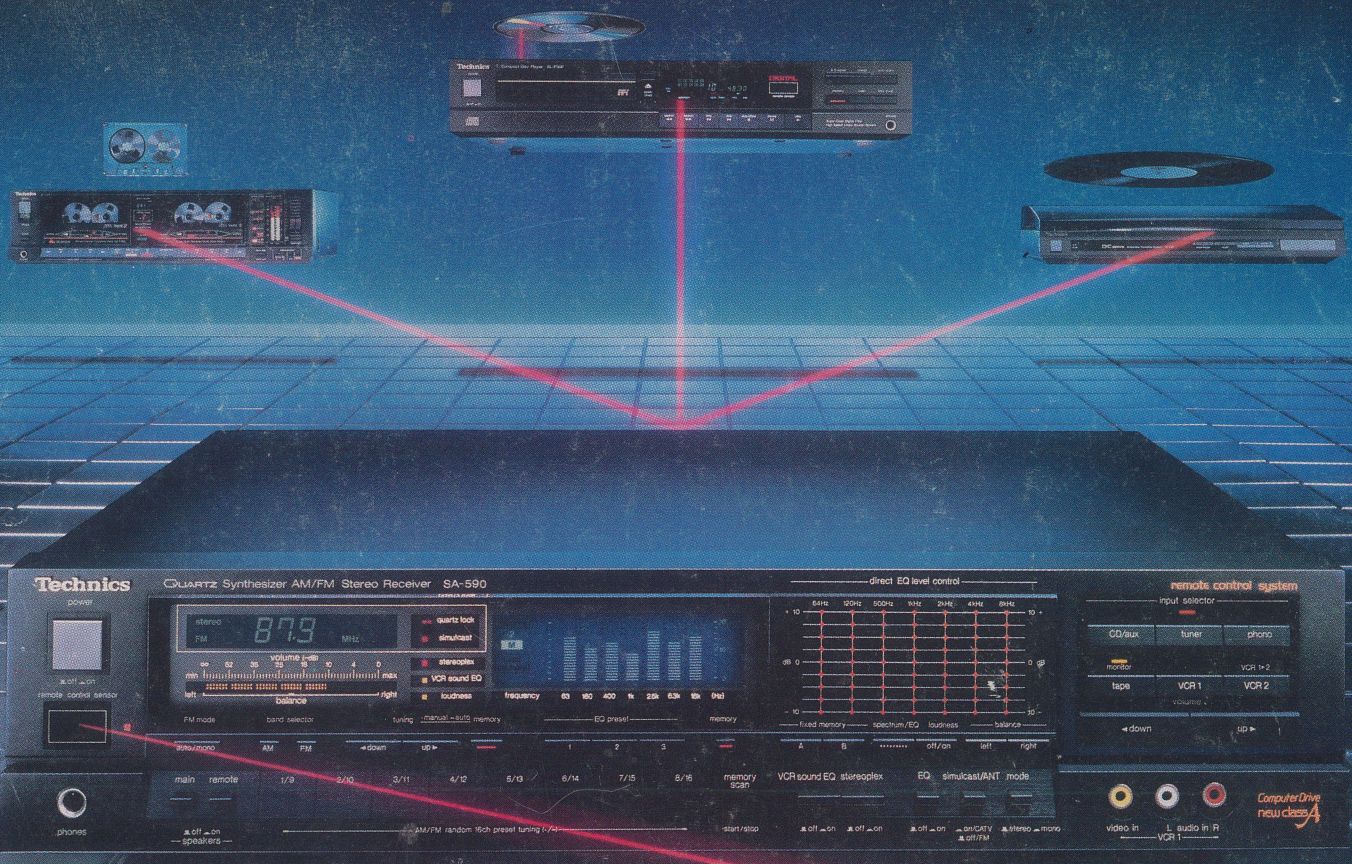

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